

COPY OF PAPERS
ORIGINALLY FILED

1 →

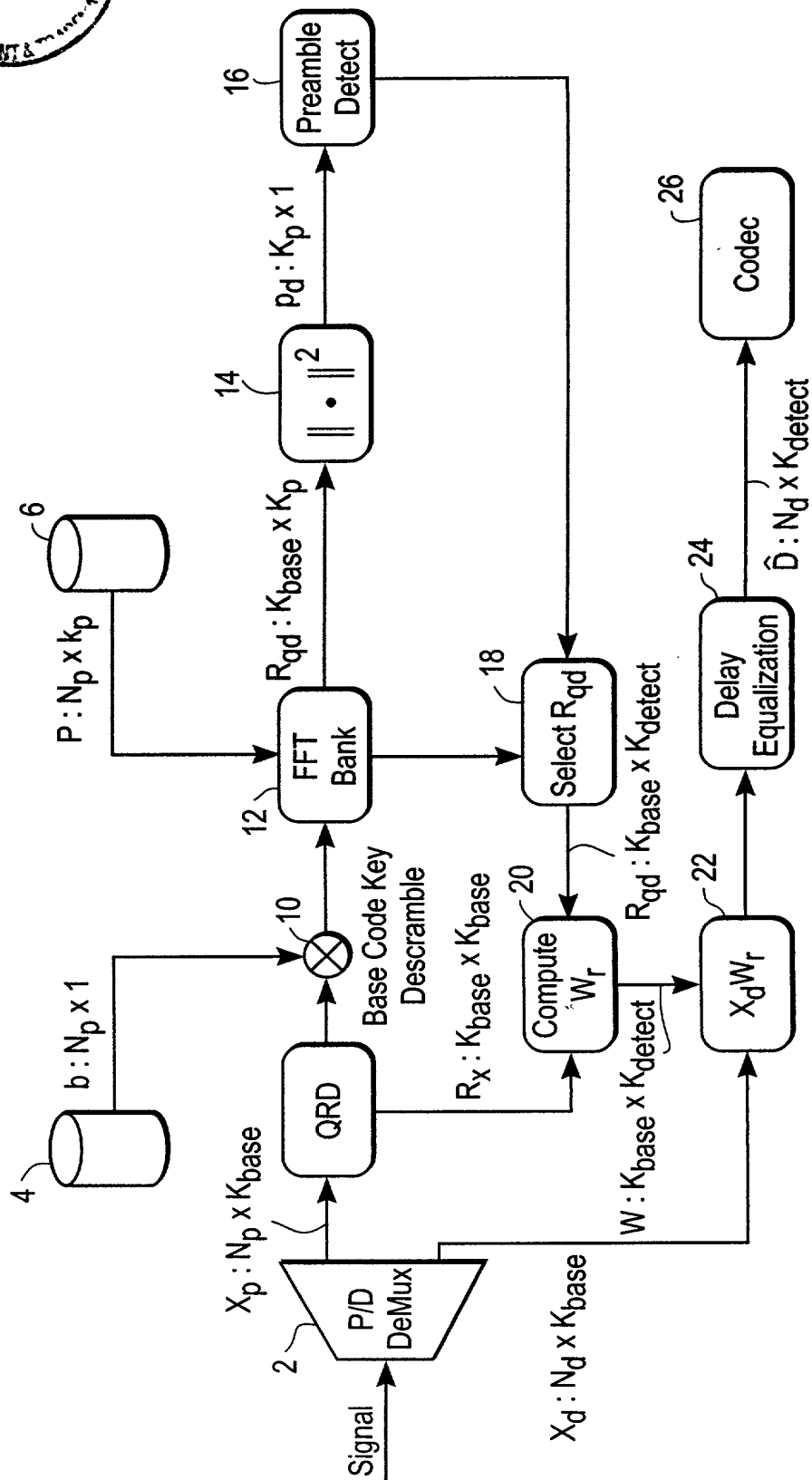
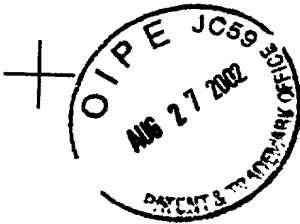


FIG. 1

204280" 4662600T



COPY OF PAPERS
ORIGINALLY FILED

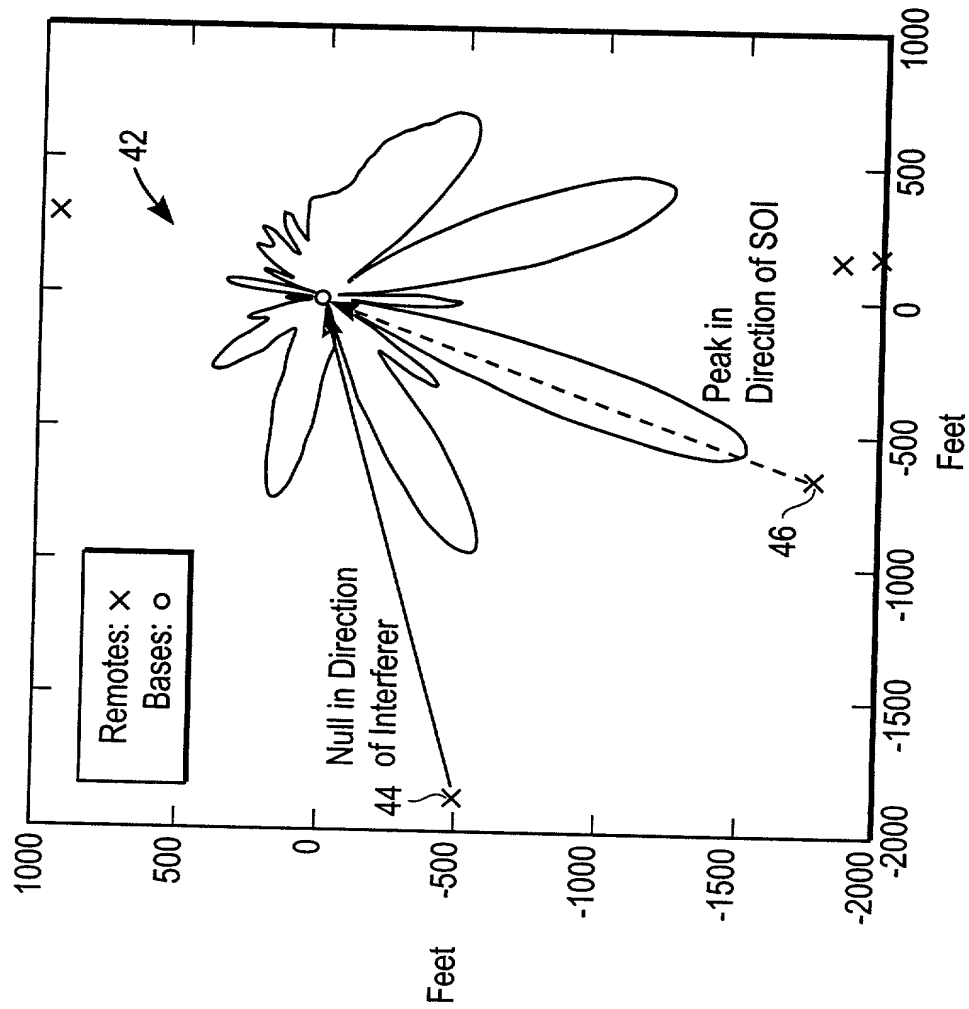
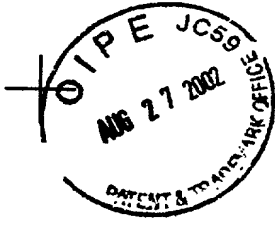


FIG. 2



COPY OF PAPERS
ORIGINALLY FILED

50 →

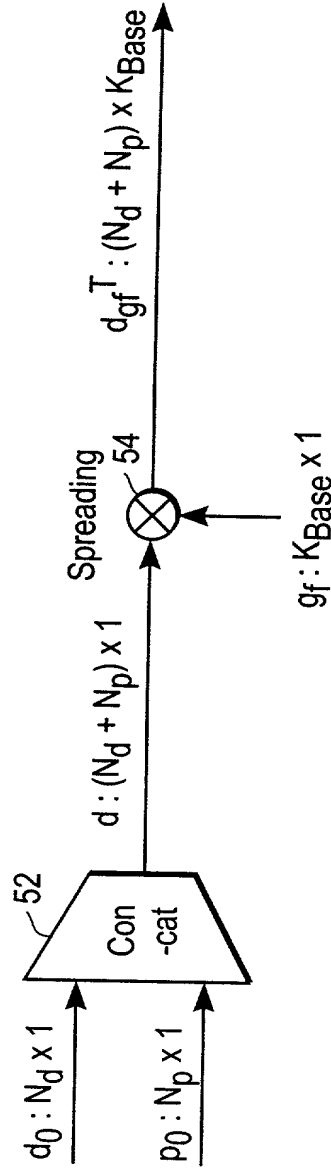


FIG. 3



60



COPY OF PAPERS
ORIGINALLY FILED

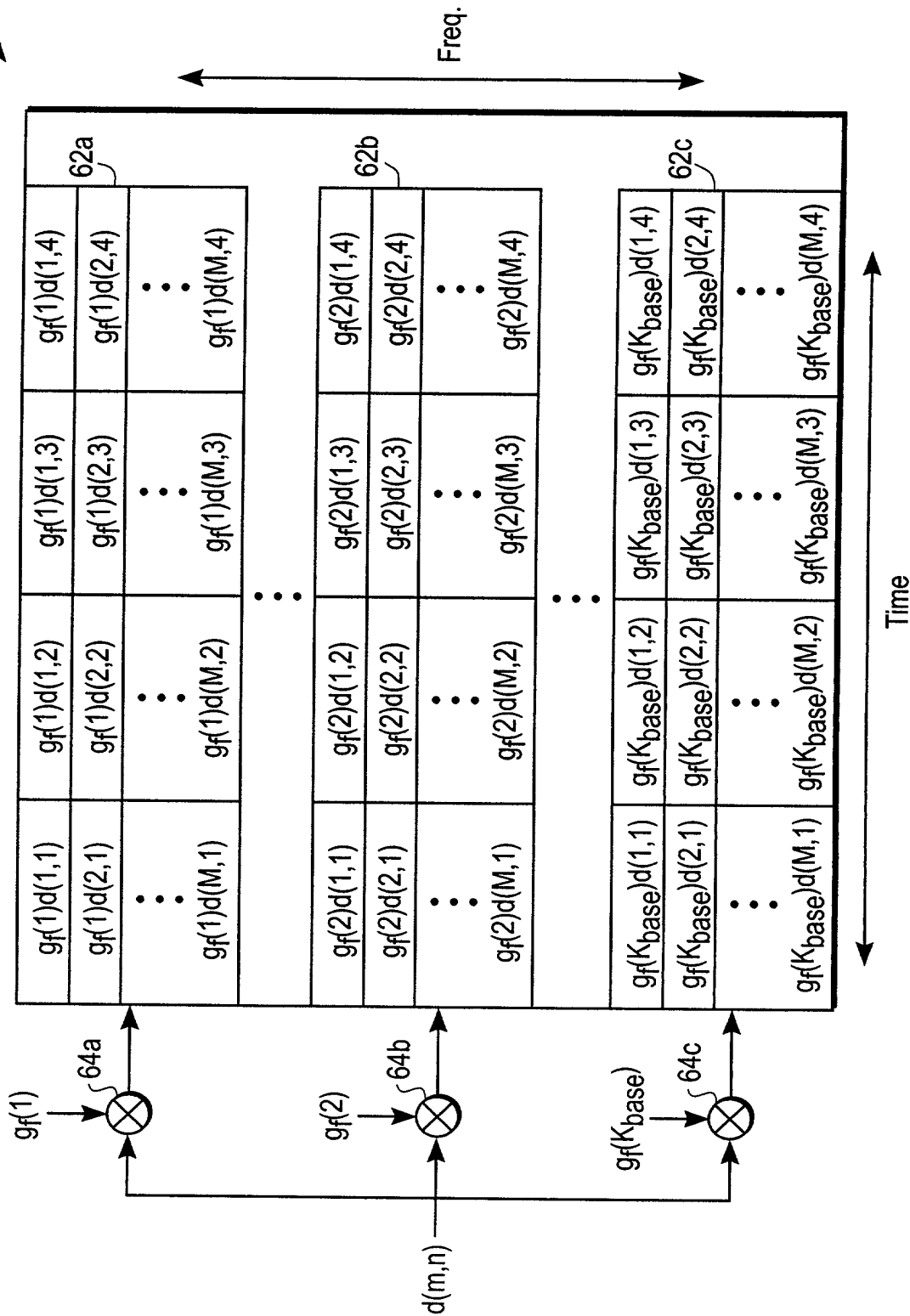
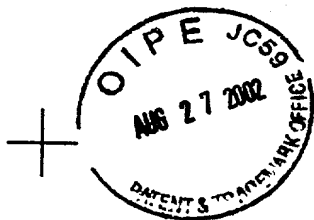


FIG. 4





COPY OF PAPERS
ORIGINALLY FILED

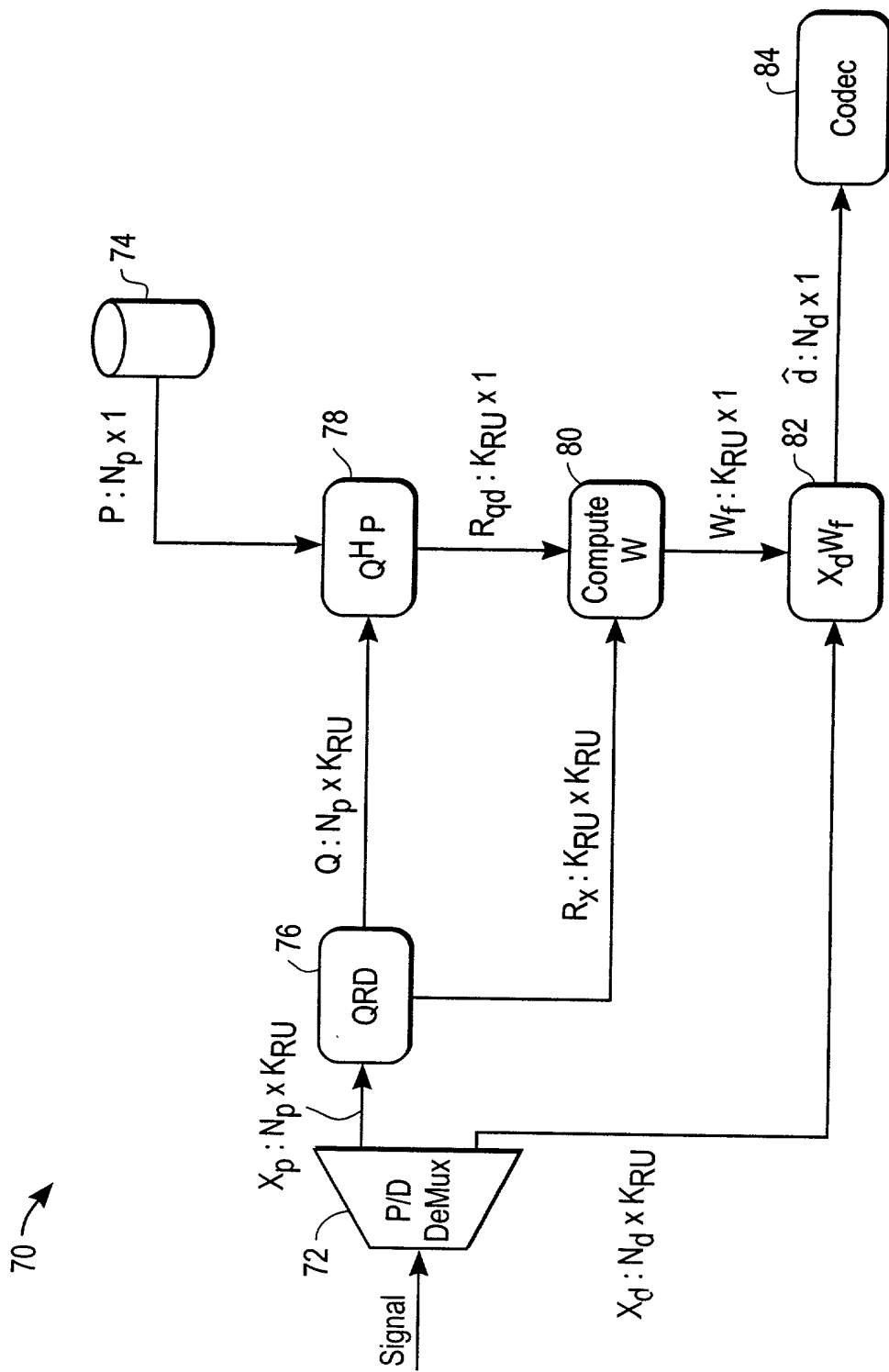


FIG. 5

204280" 46626001



COPY OF PAPERS
ORIGINALLY FILED

85

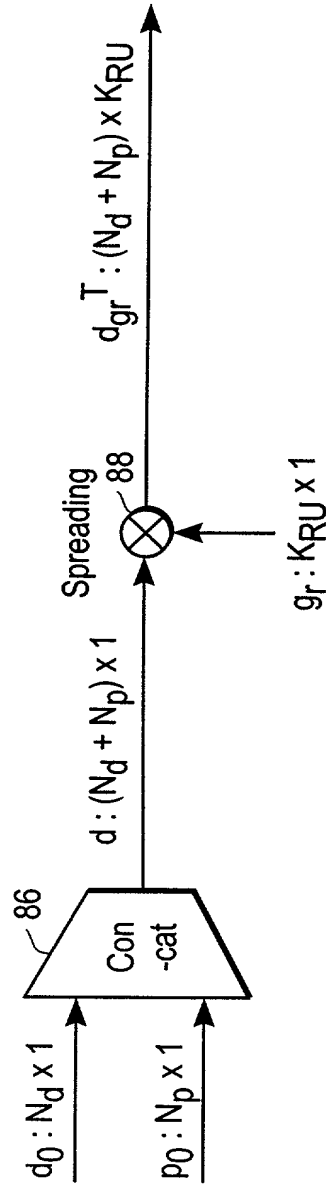


FIG. 6

+



COPY OF PAPERS
ORIGINALLY FILED

90

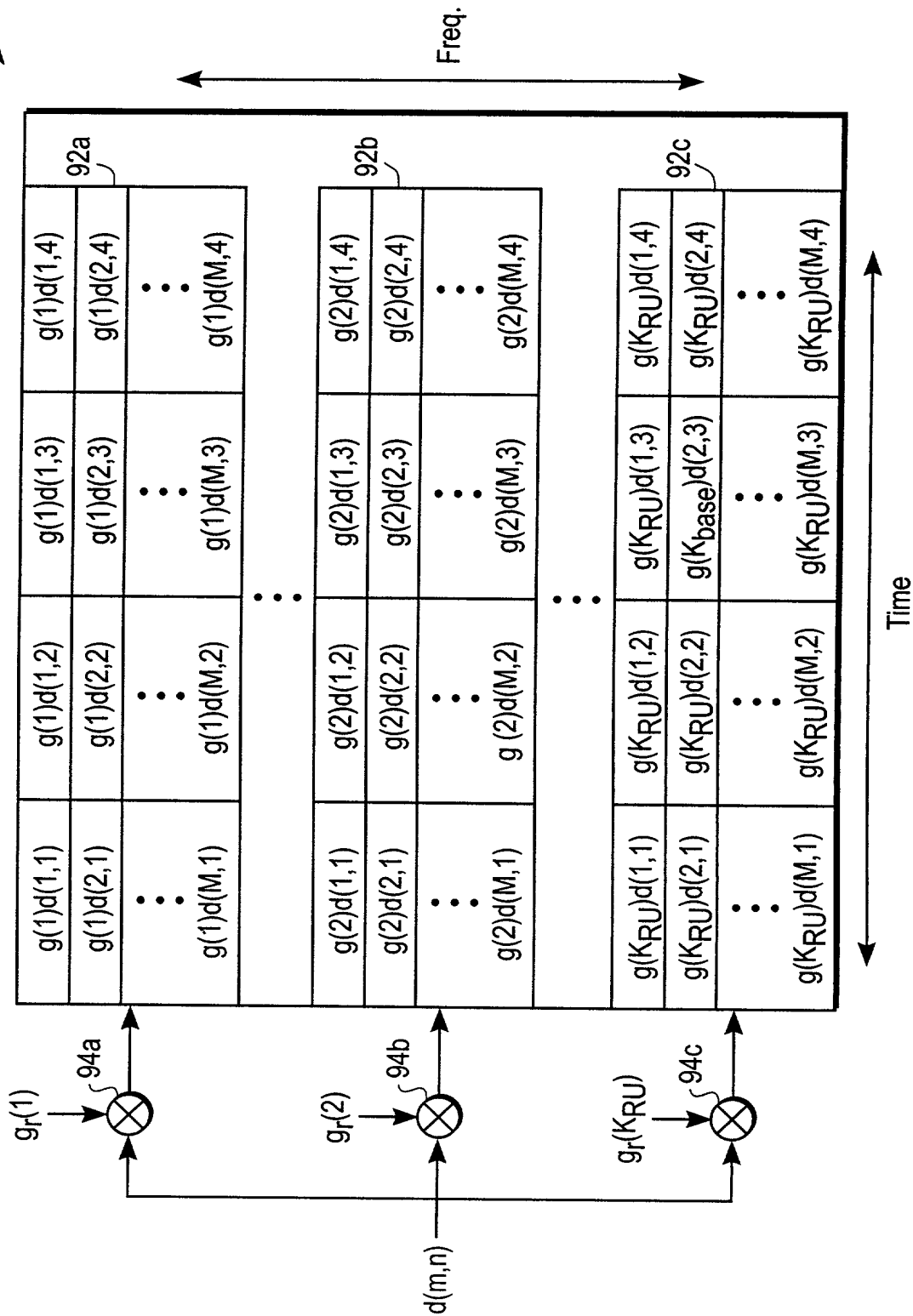
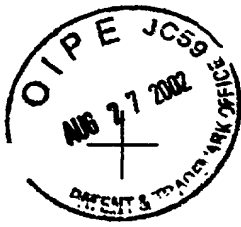


FIG. 7



COPY OF PAPERS
ORIGINALLY FILED

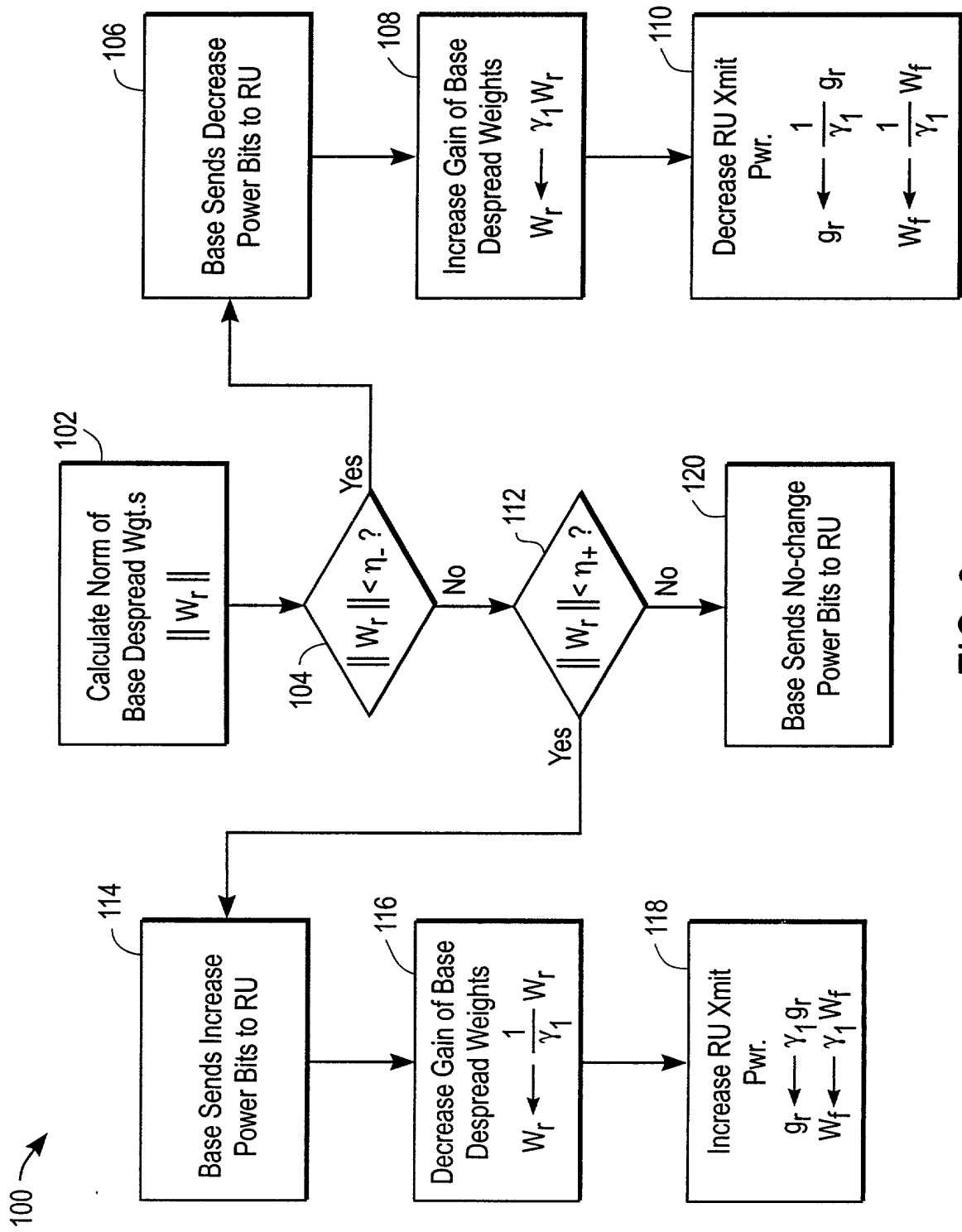
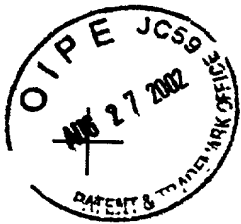


FIG. 8



COPY OF PAPERS
ORIGINALLY FILED

121 →

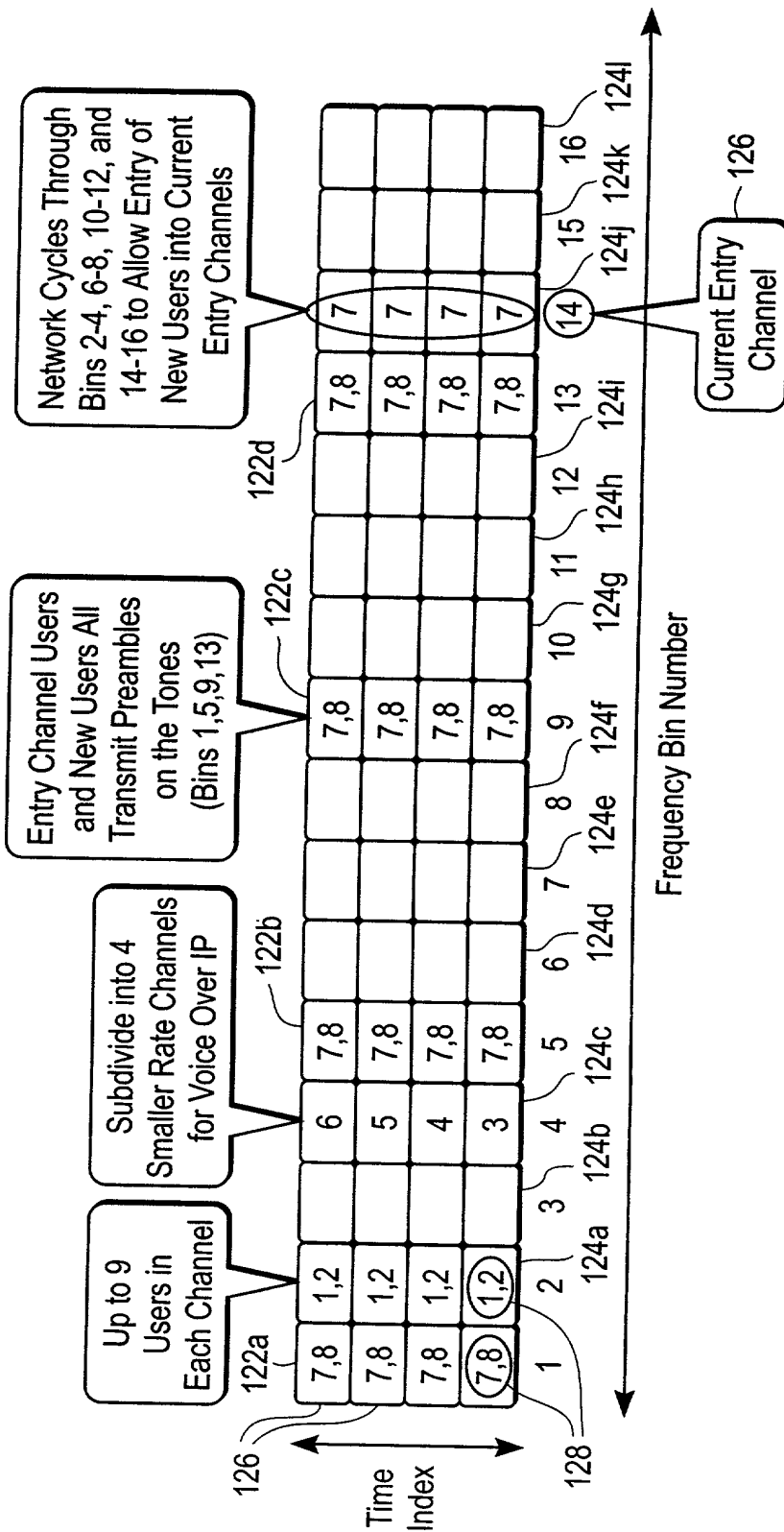
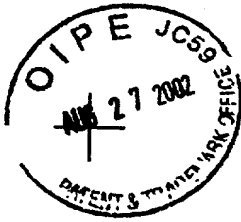


FIG. 9



COPY OF PAPERS
ORIGINALLY FILED

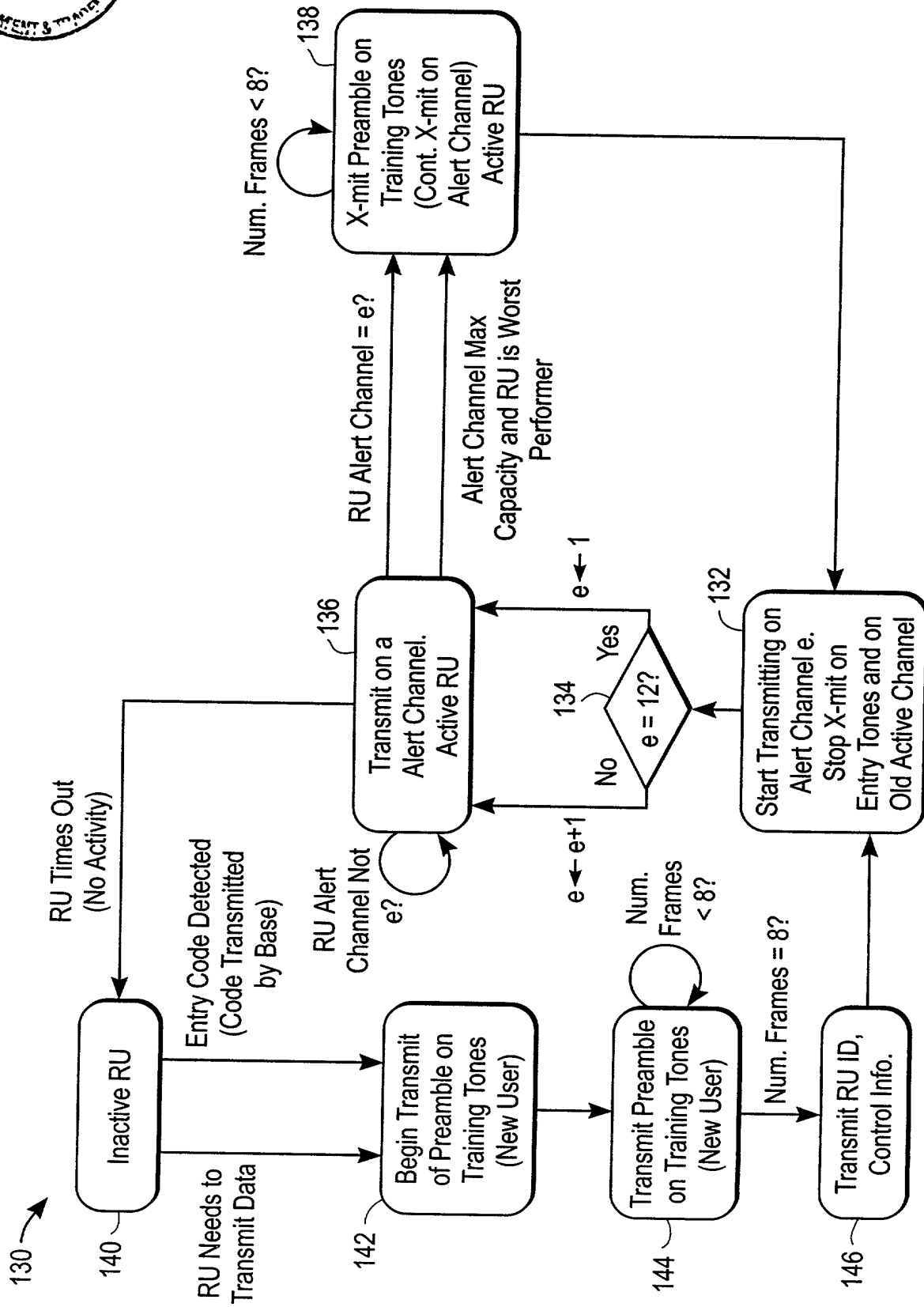
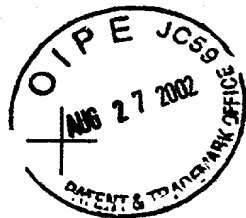


FIG. 10

FIG. 11



COPY OF PAPERS
ORIGINALLY FILED

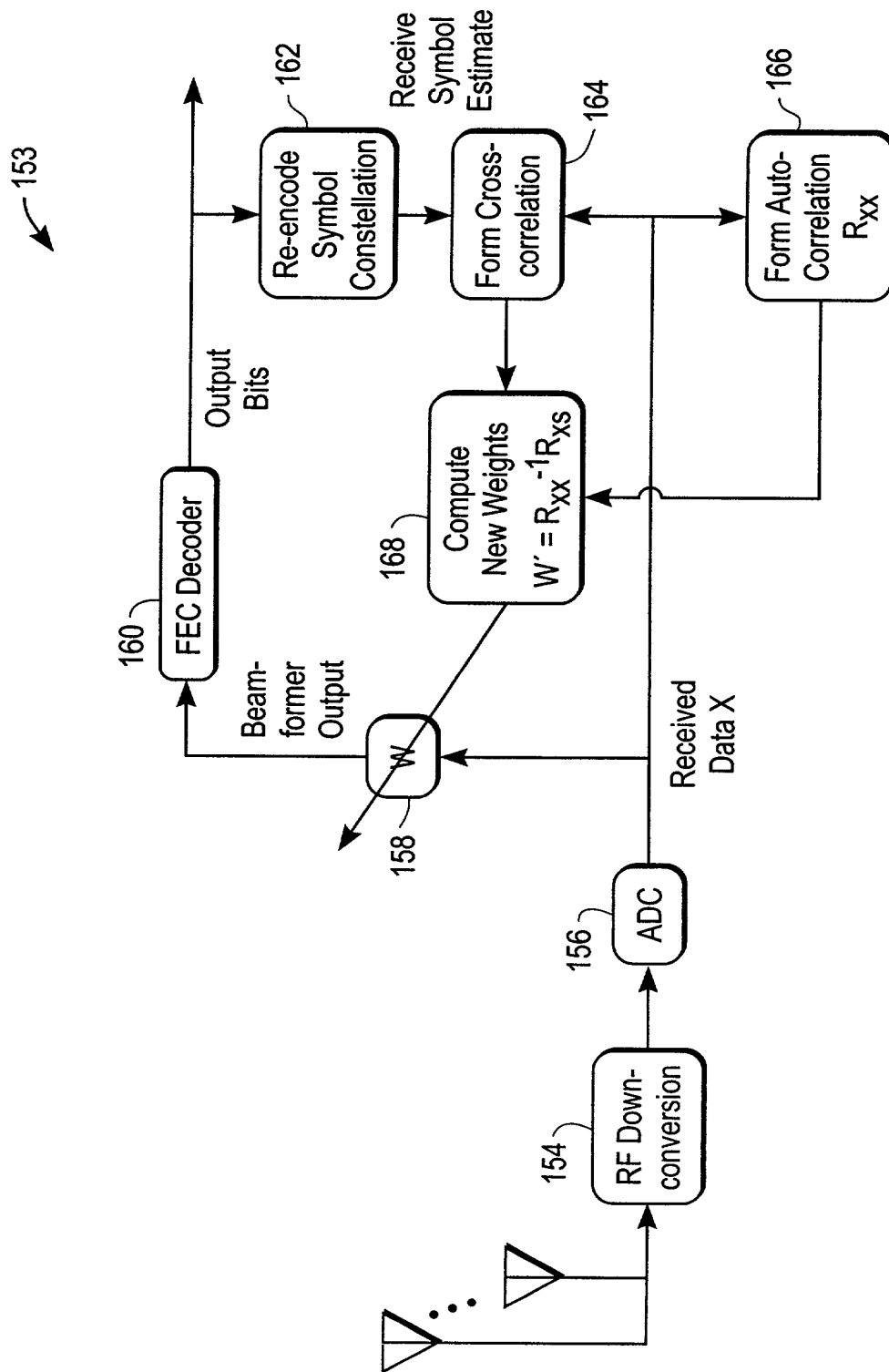


FIG. 12

Stamp: OIPE JC59
27 2002
OFFICE OF TRADE MARKS

169

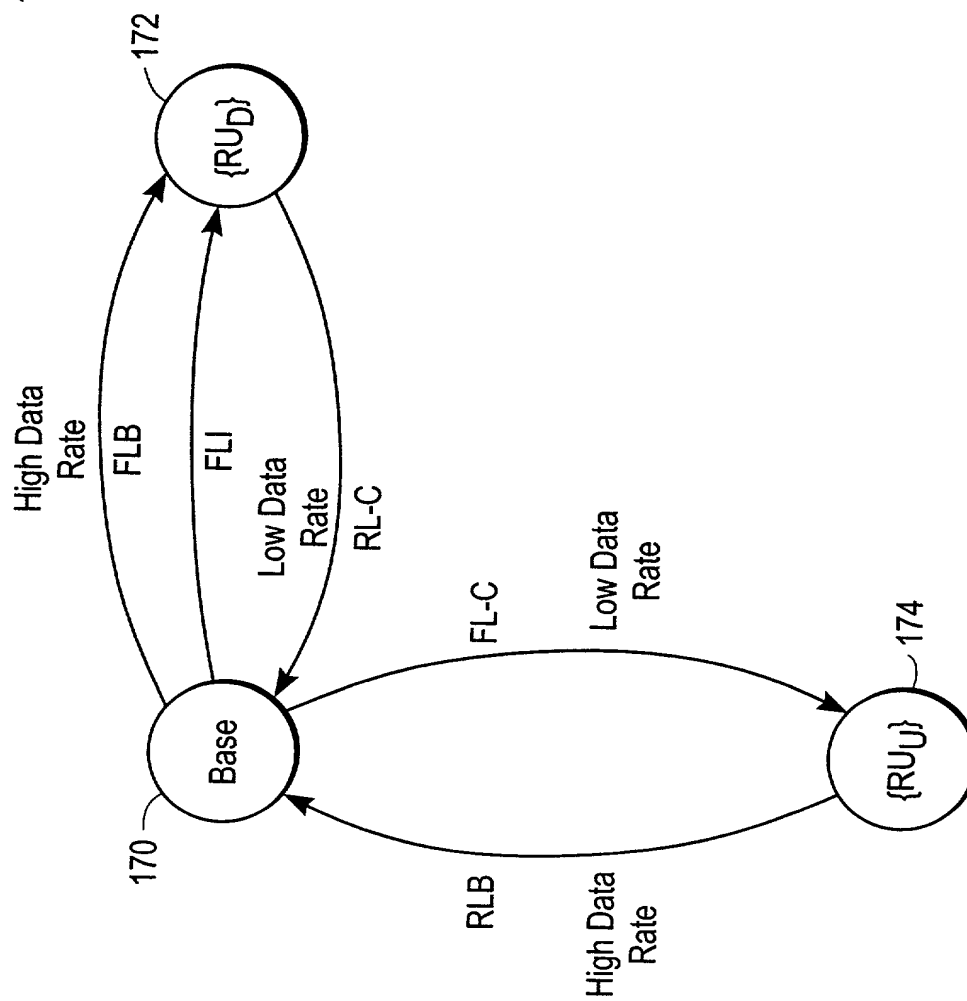
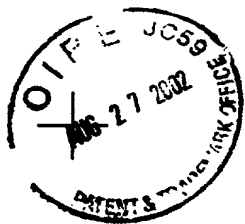


FIG. 13

+



COPY OF PAPERS
ORIGINALLY FILED

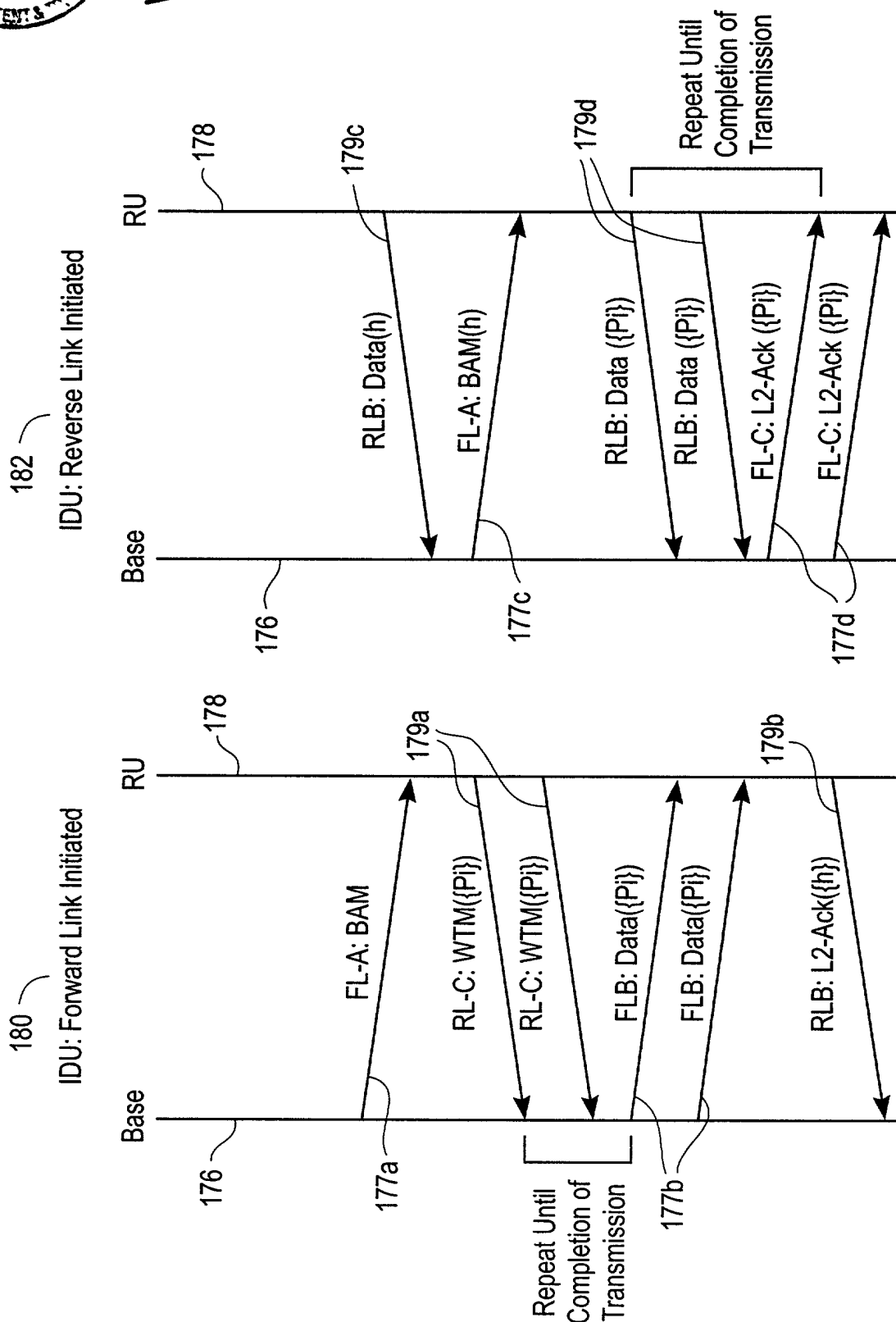
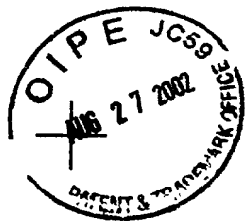


FIG. 14

204280" 4E62600T



COPY OF PAPERS
ORIGINALLY FILED

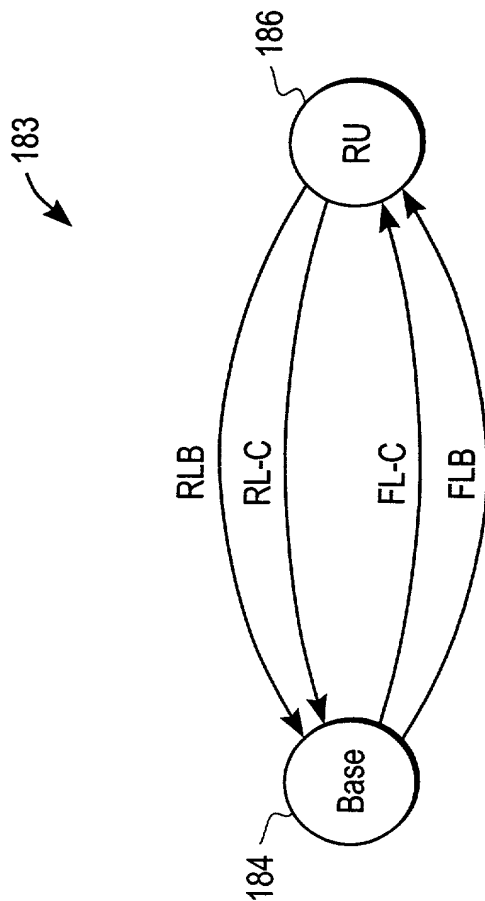


FIG. 15

+



COPY OF PAPERS
ORIGINALLY FILED

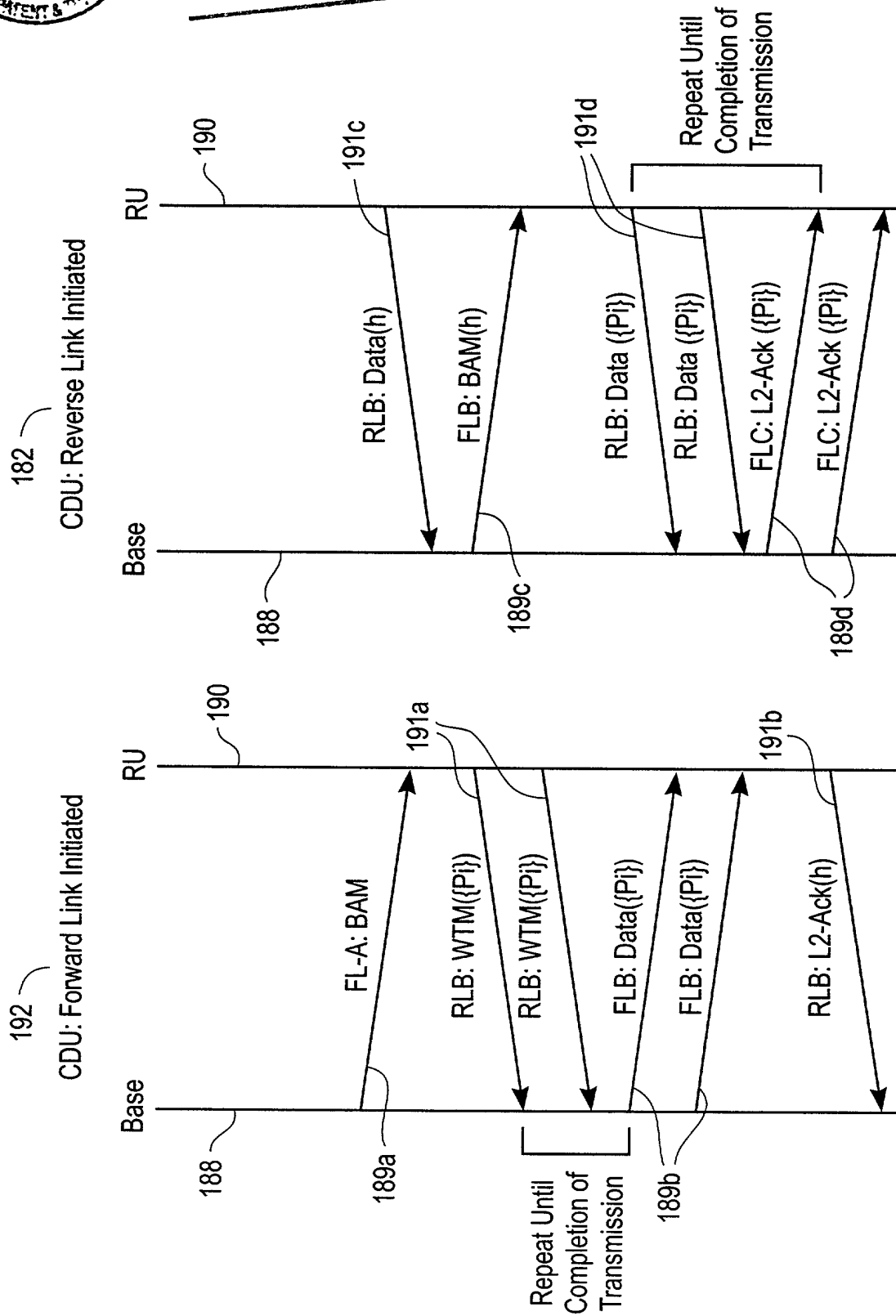
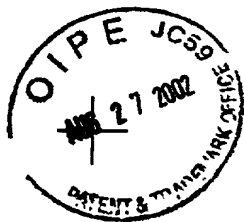


FIG. 16



COPY OF PAPERS
ORIGINALLY FILED

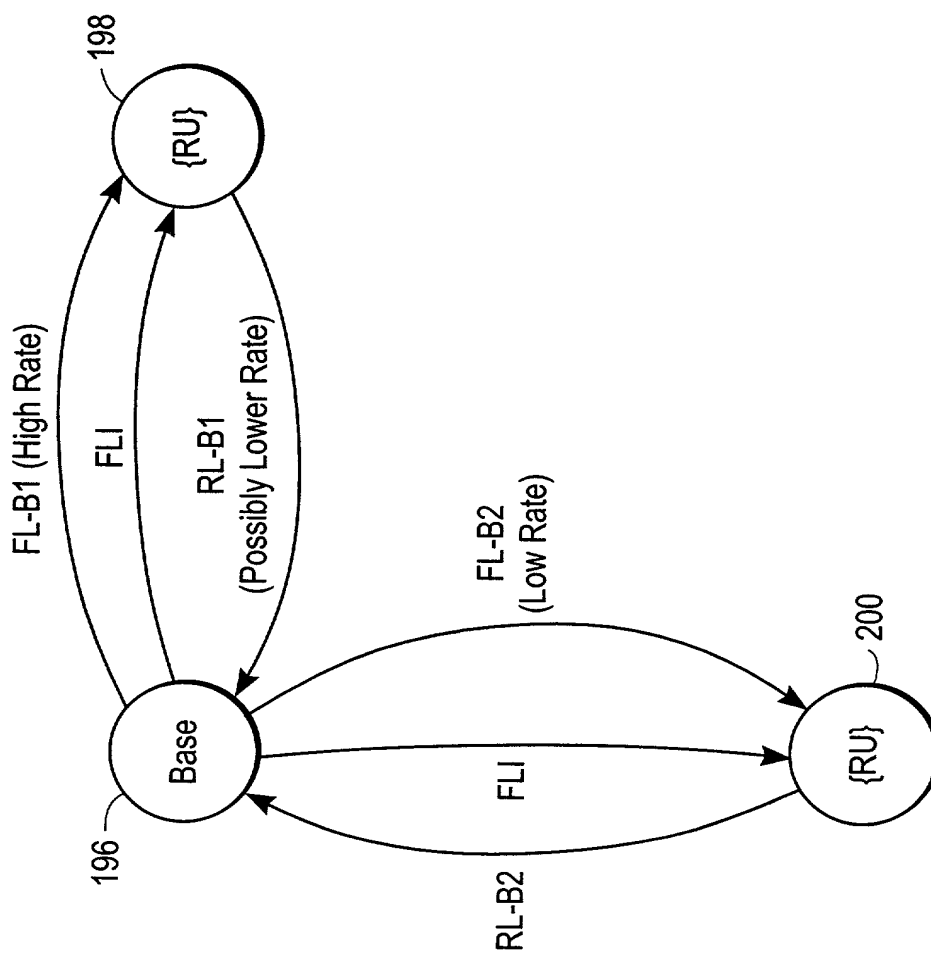
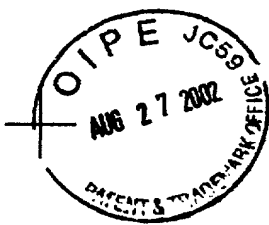


FIG. 17

204280" 4E62600T



COPY OF PAPERS
ORIGINALLY FILED

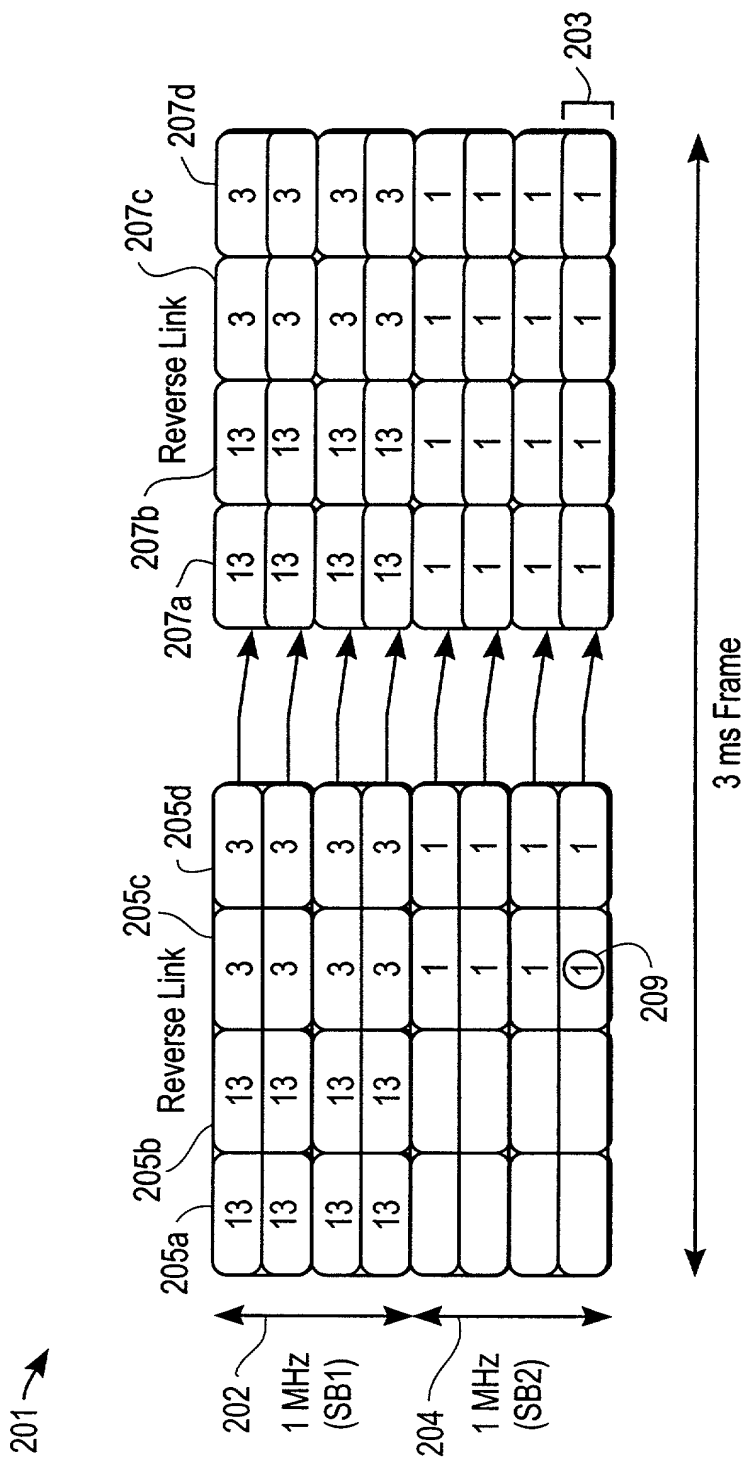
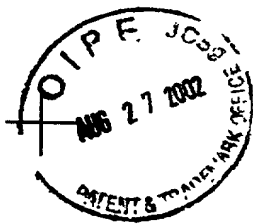


FIG. 18

+

202207262600T



COPY OF PAPERS
ORIGINALLY FILED

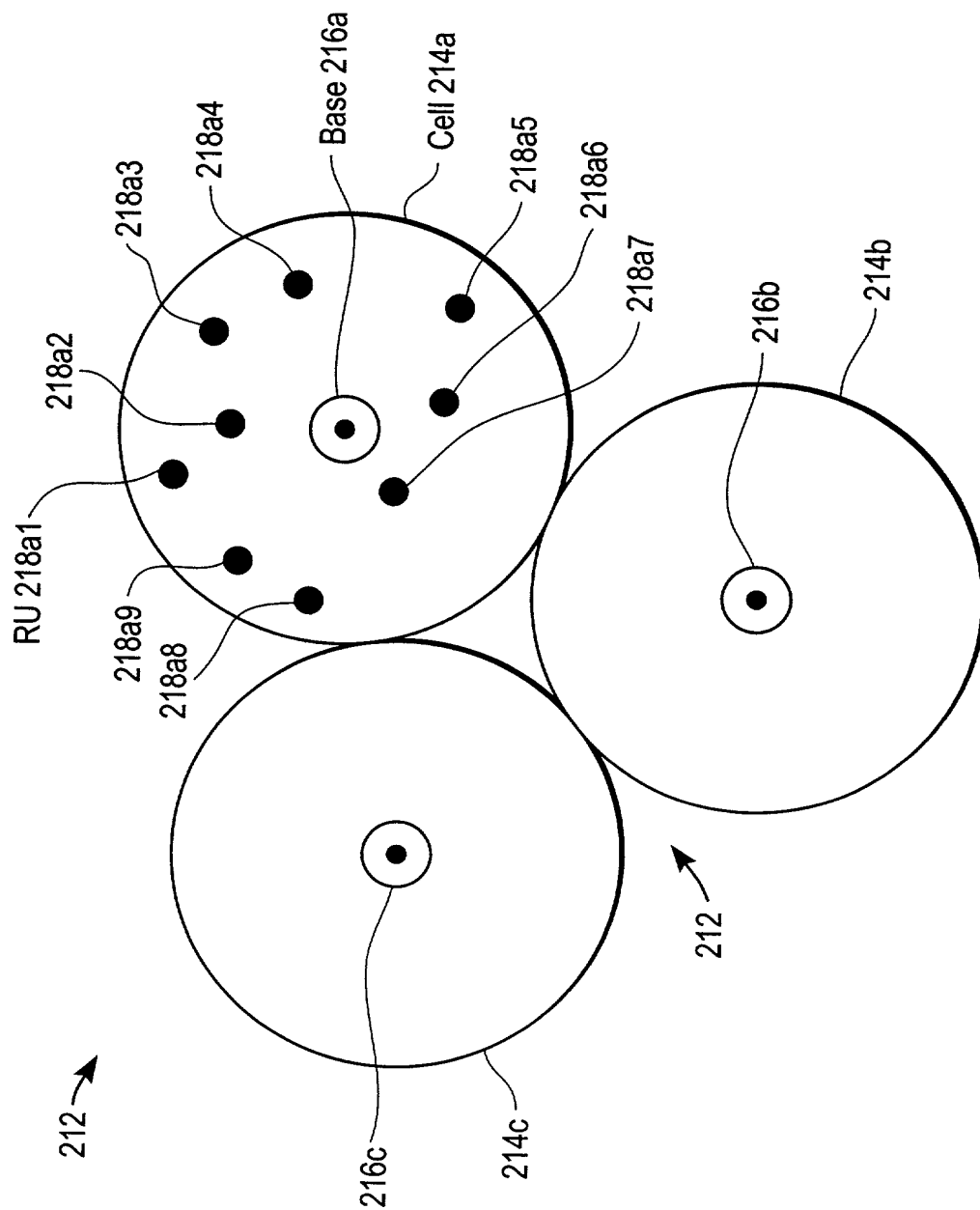


FIG. 19



COPY OF PAPERS
ORIGINALLY FILED

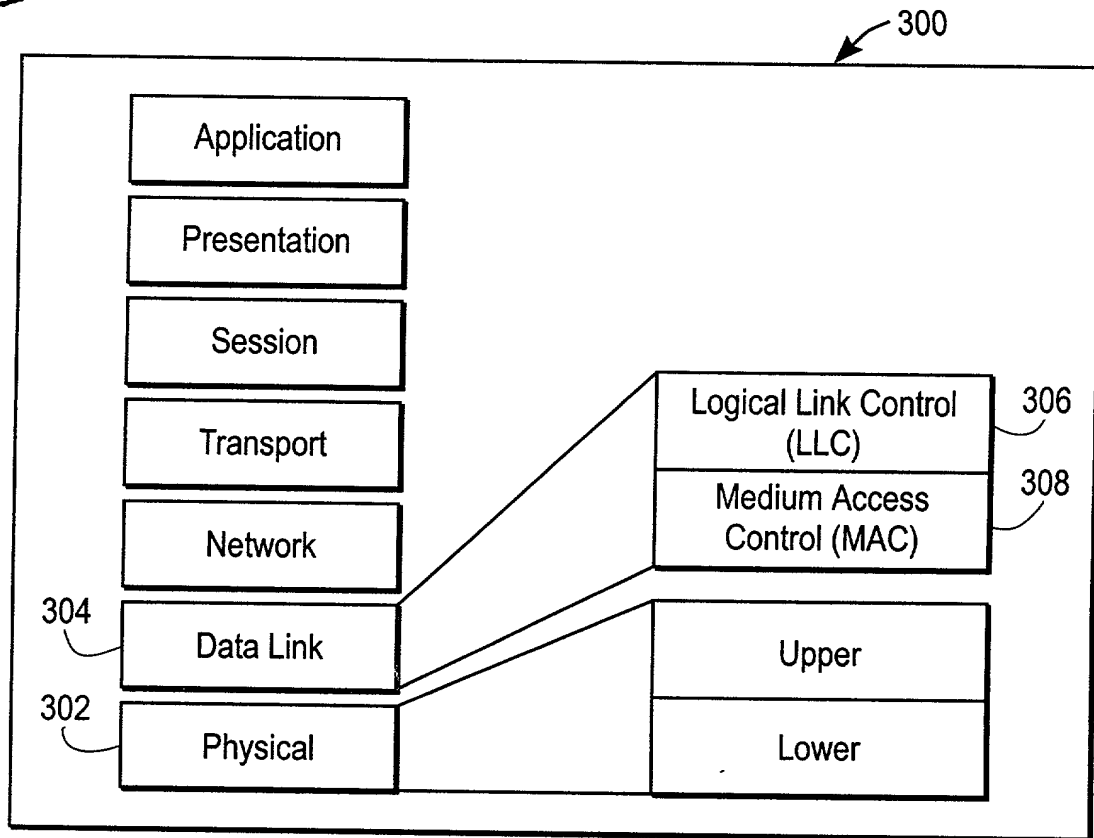


FIG. 20
(PRIOR ART)

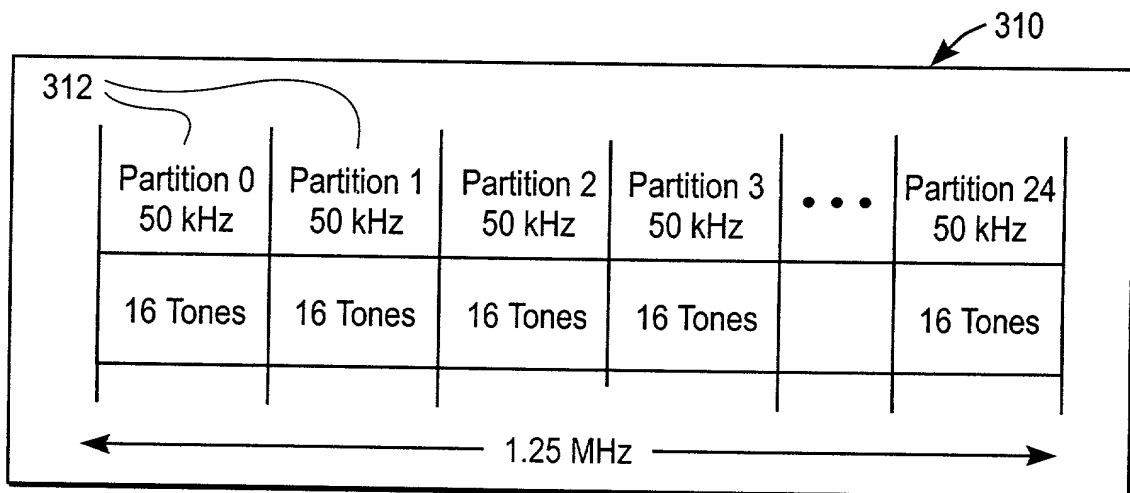
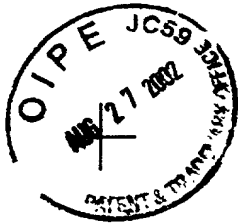


FIG. 21



COPY OF PAPERS
ORIGINALLY FILED

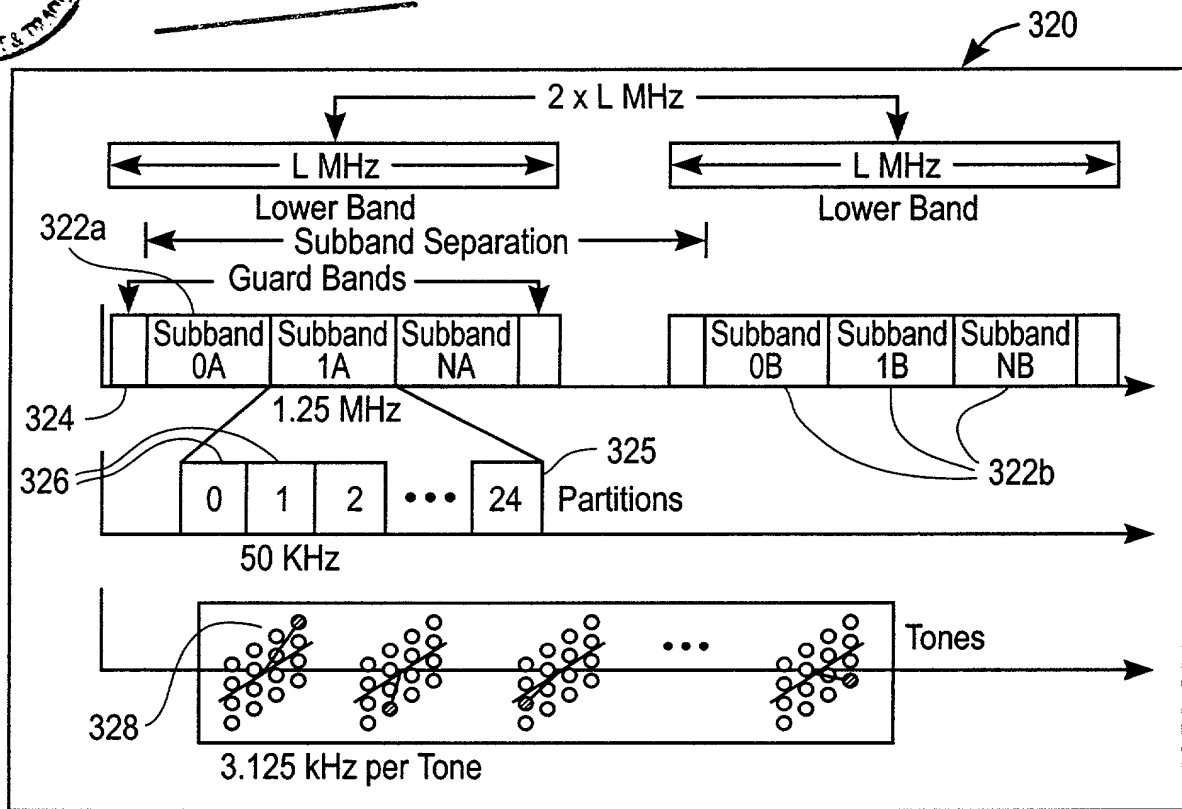


FIG. 22

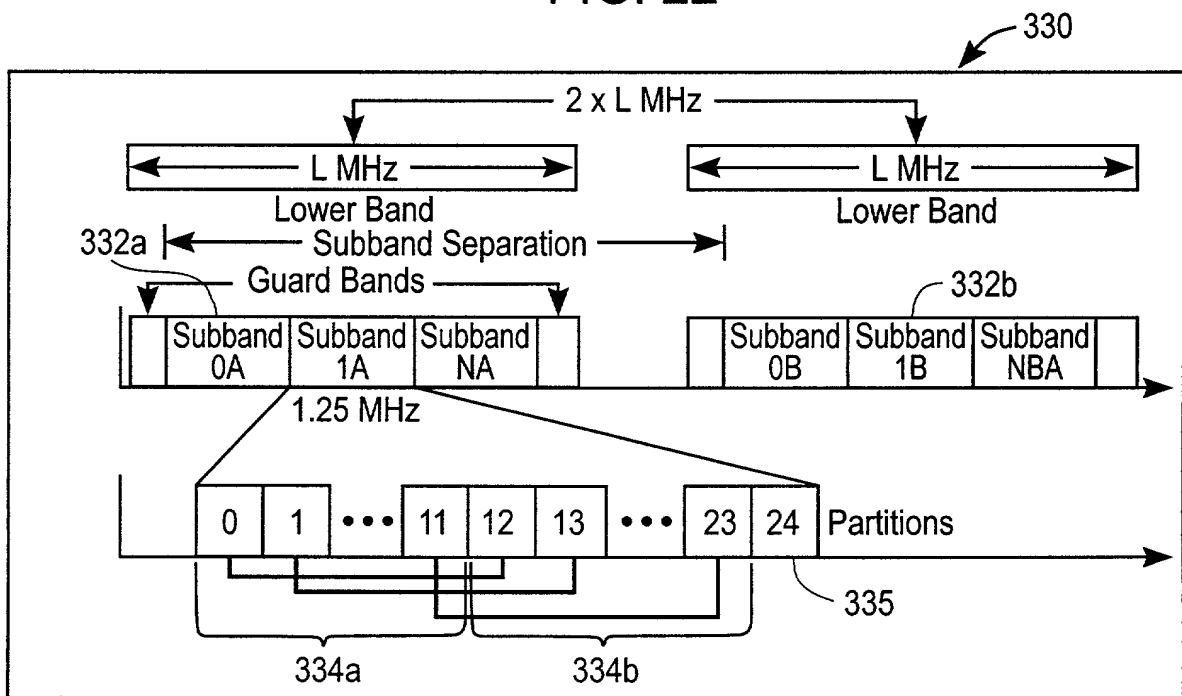


FIG. 23

202280" 42526007



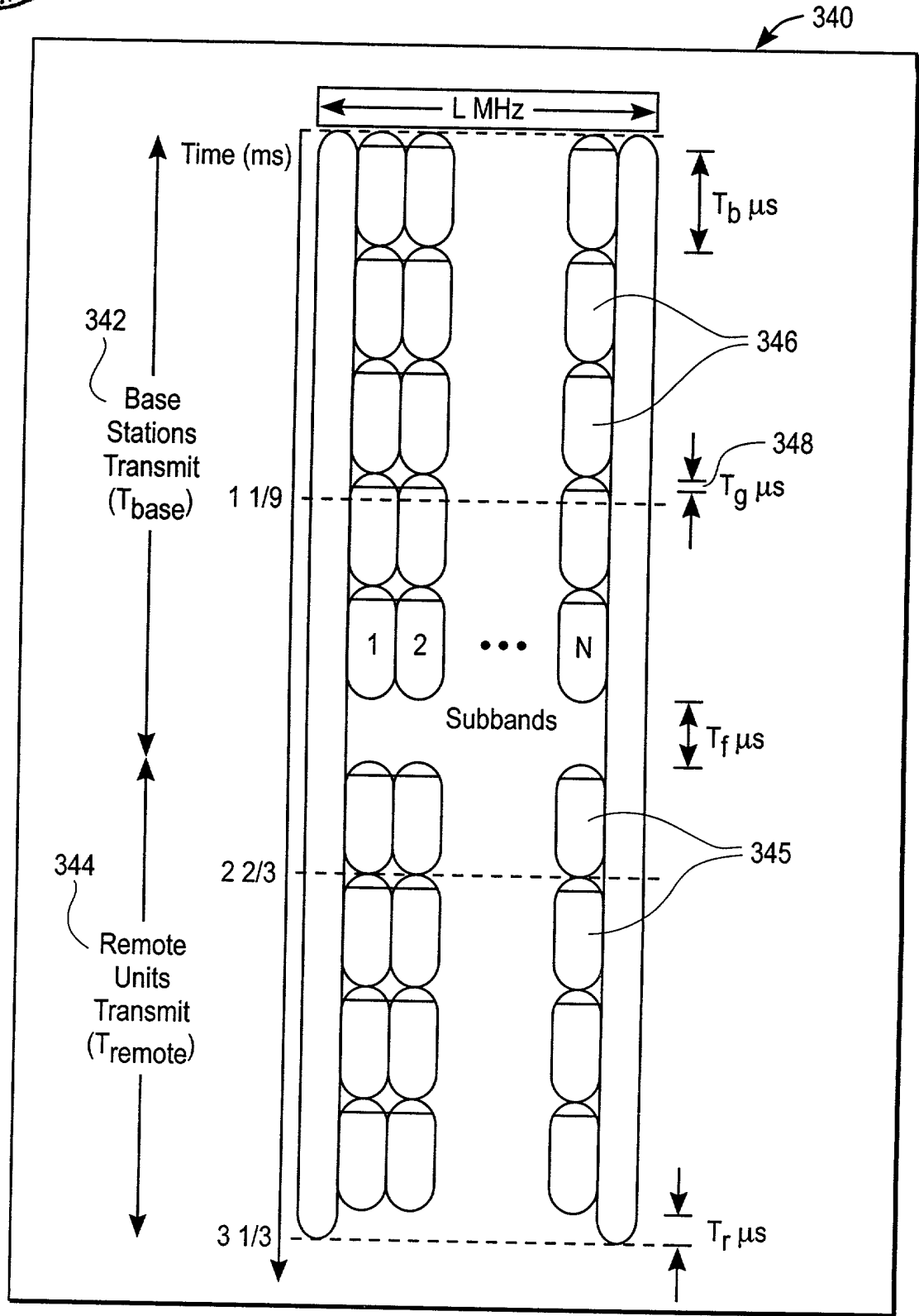


FIG. 24



COPY OF PAPERS
ORIGINALLY FILED

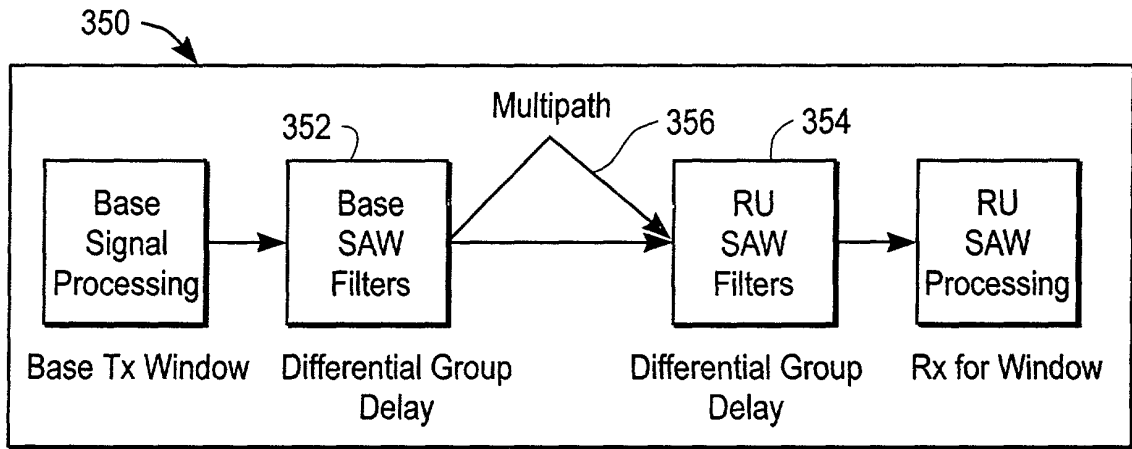


FIG. 25

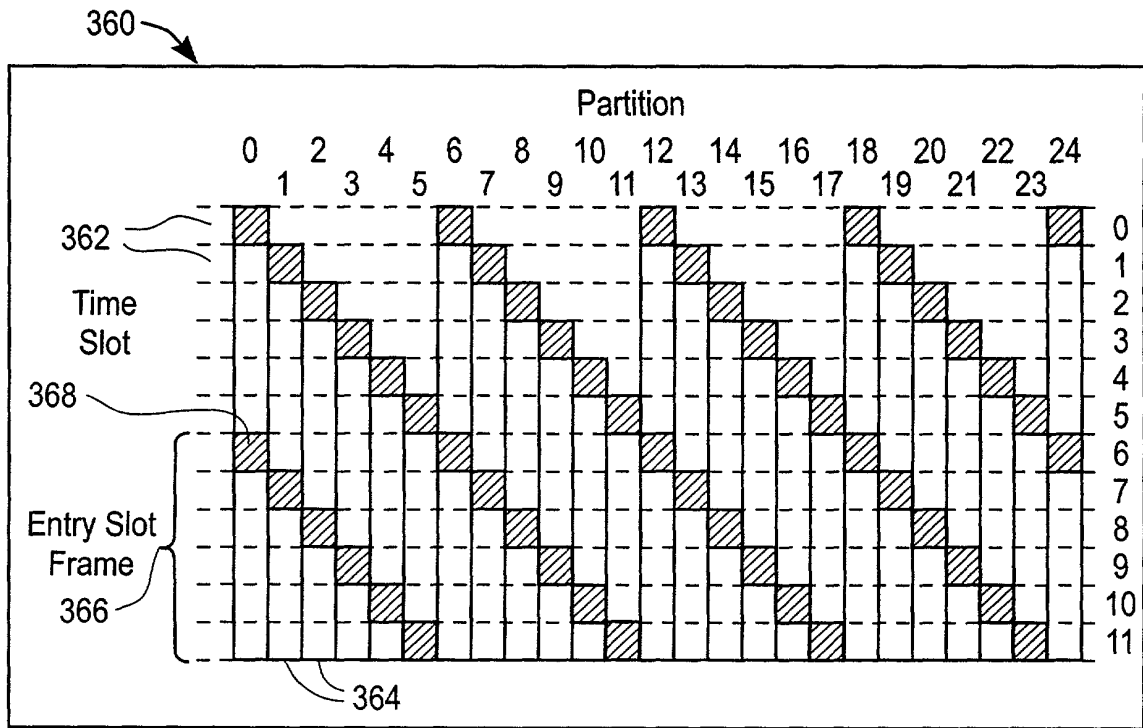
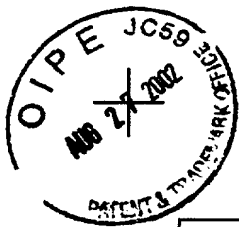


FIG. 26





COPY OF PAPERS
ORIGINALLY FILED

370

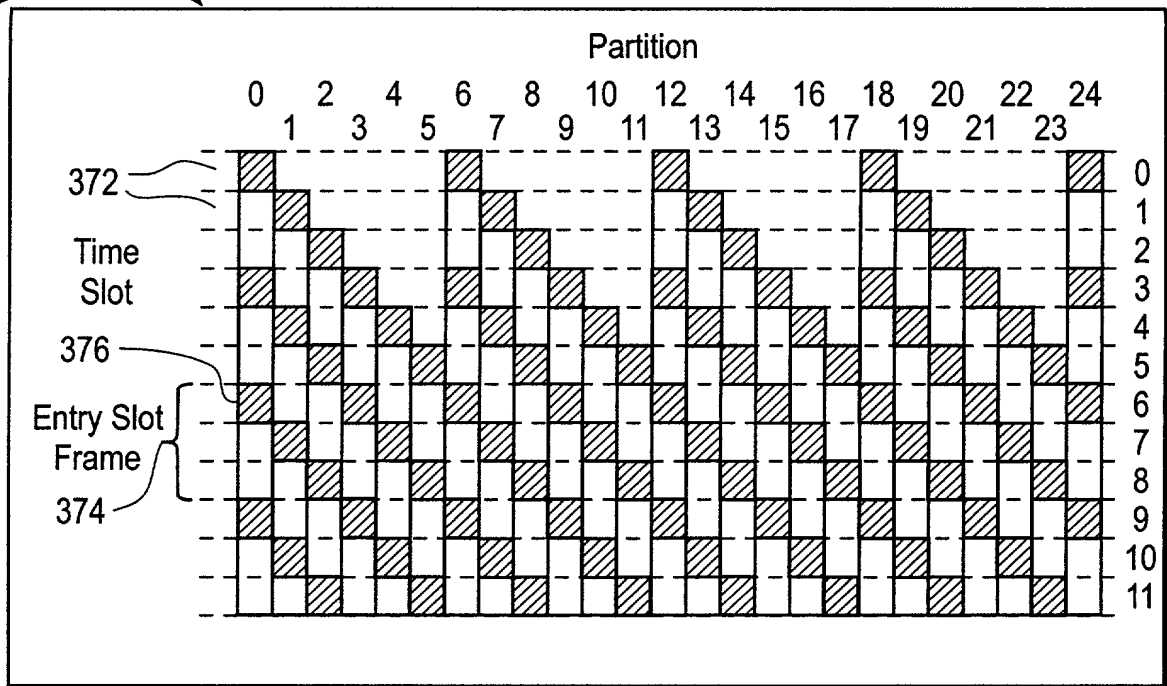


FIG. 27

380

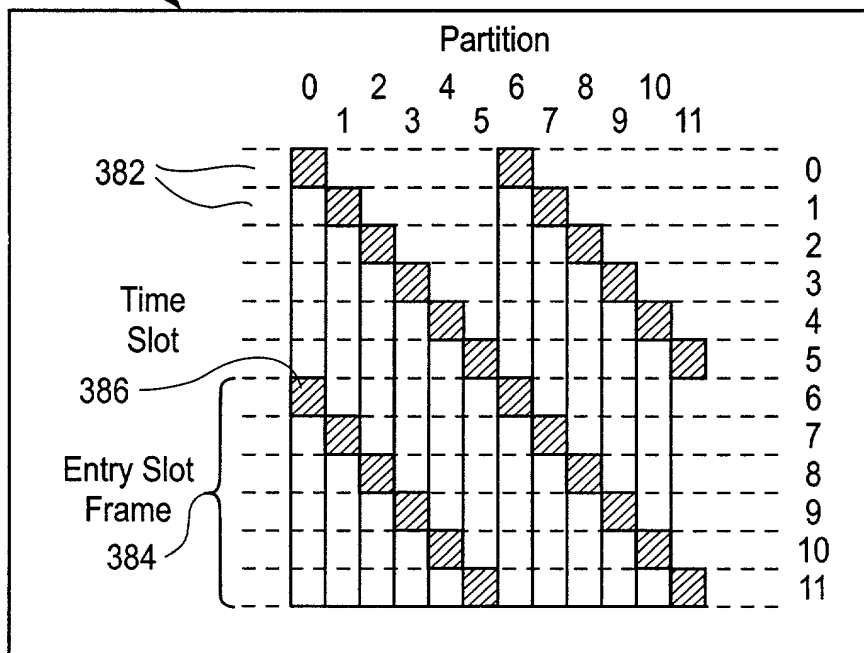


FIG. 28

204280-LE626001





COPY OF PAPERS
ORIGINALLY FILED

390

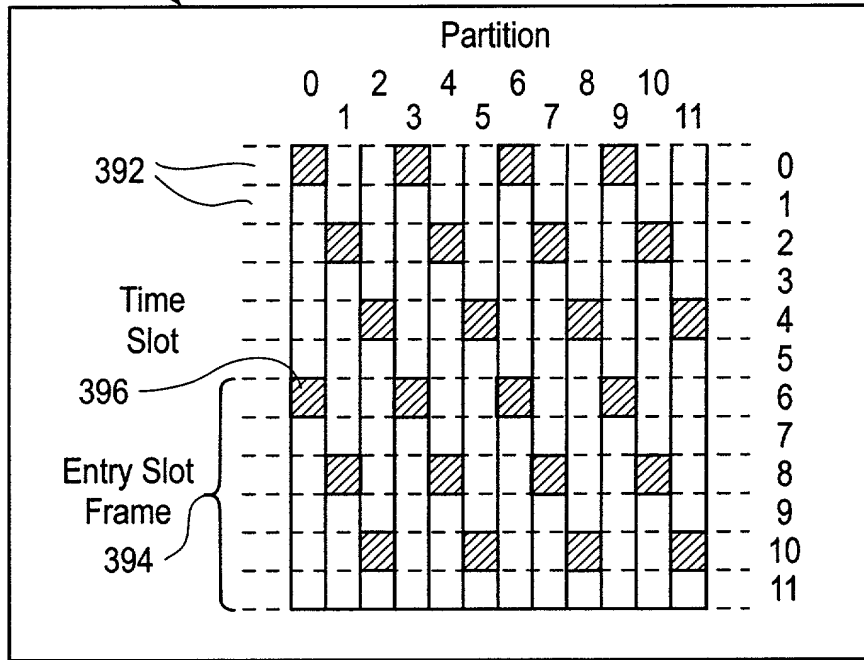


FIG. 29

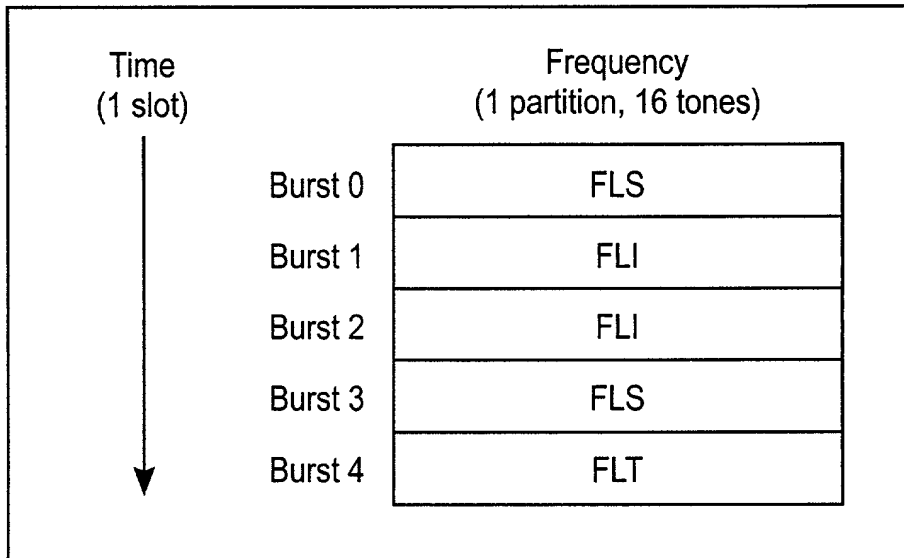
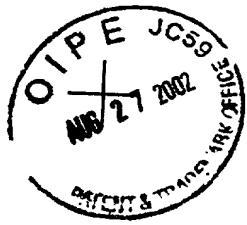


FIG. 30





COPY OF PAPERS
ORIGINALLY FILED

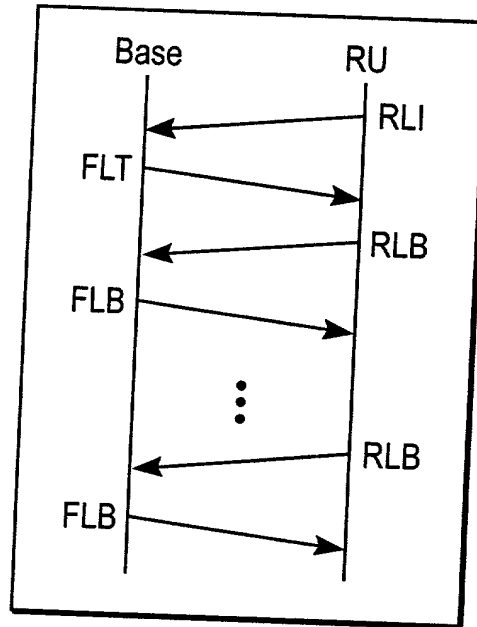


FIG. 31

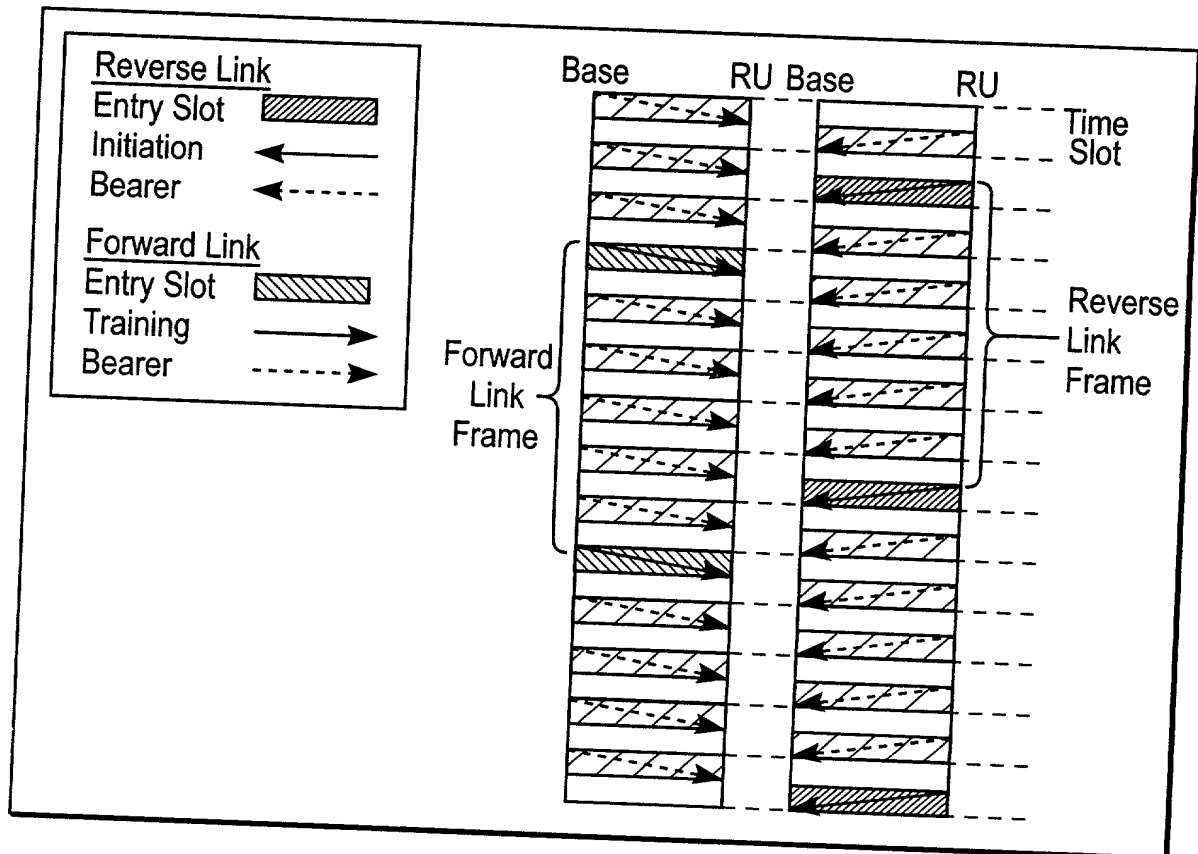
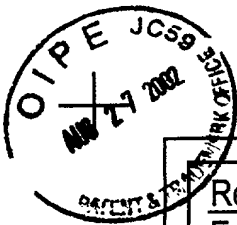


FIG. 32

202280" 462600T



COPY OF PAPERS
ORIGINALLY FILED

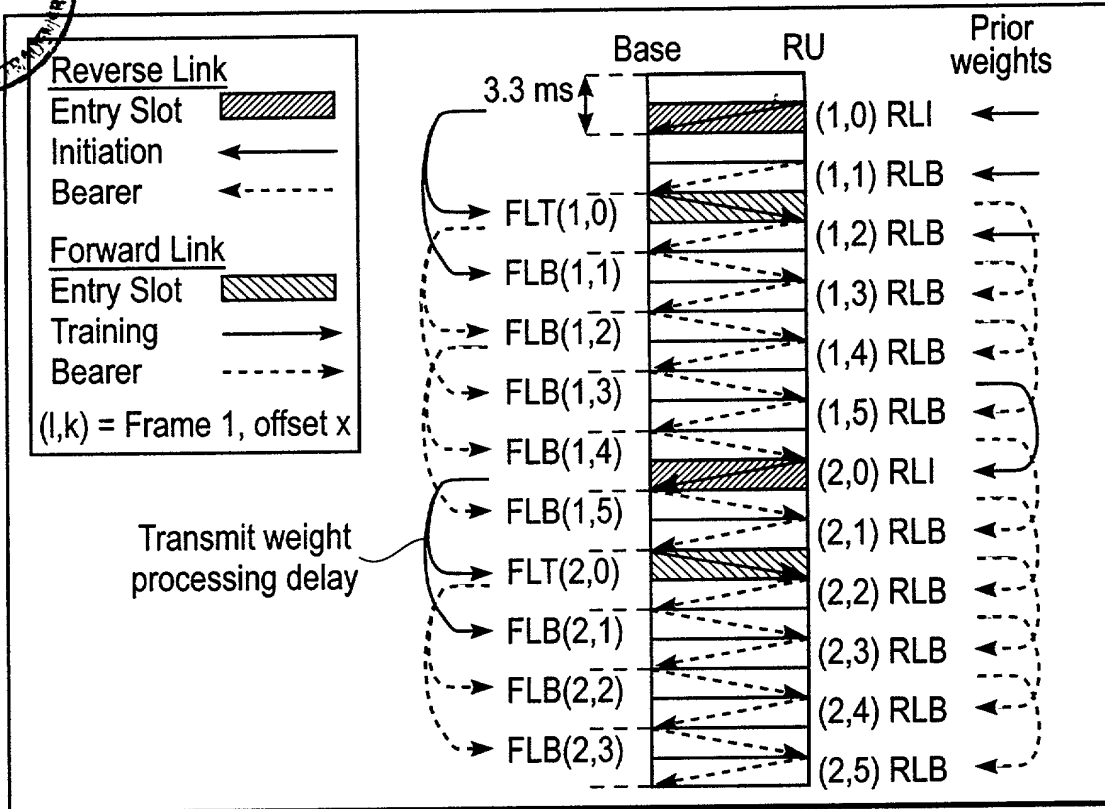


FIG. 33

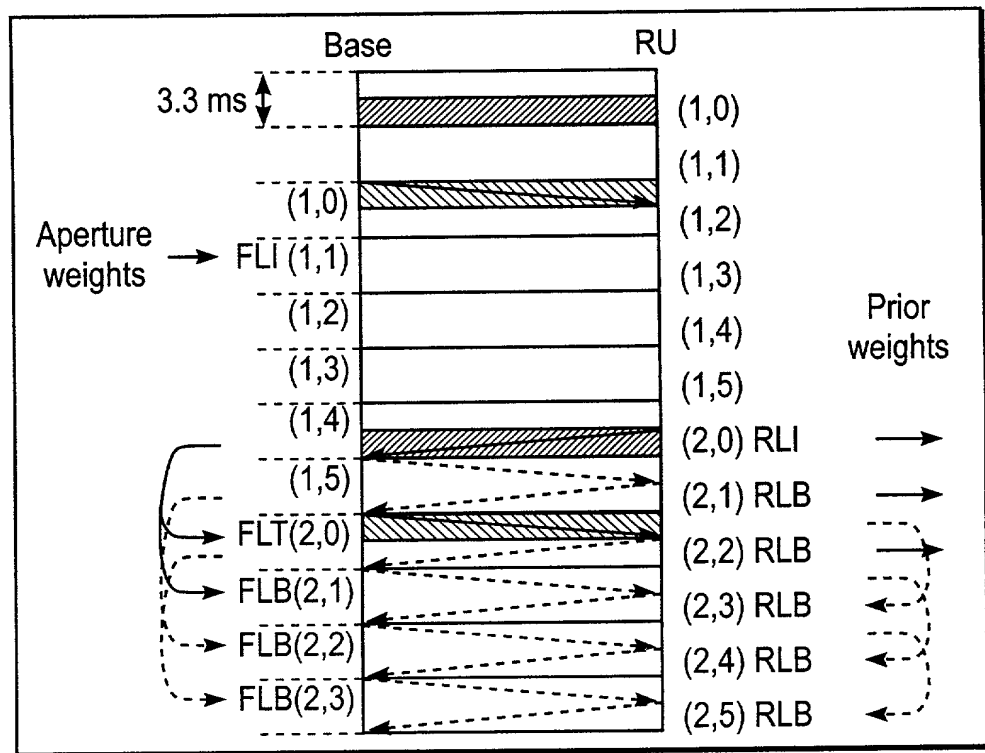
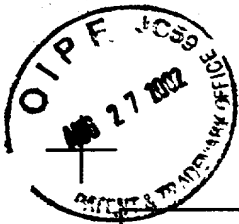


FIG. 34



COPY OF PAPERS
ORIGINALLY FILED

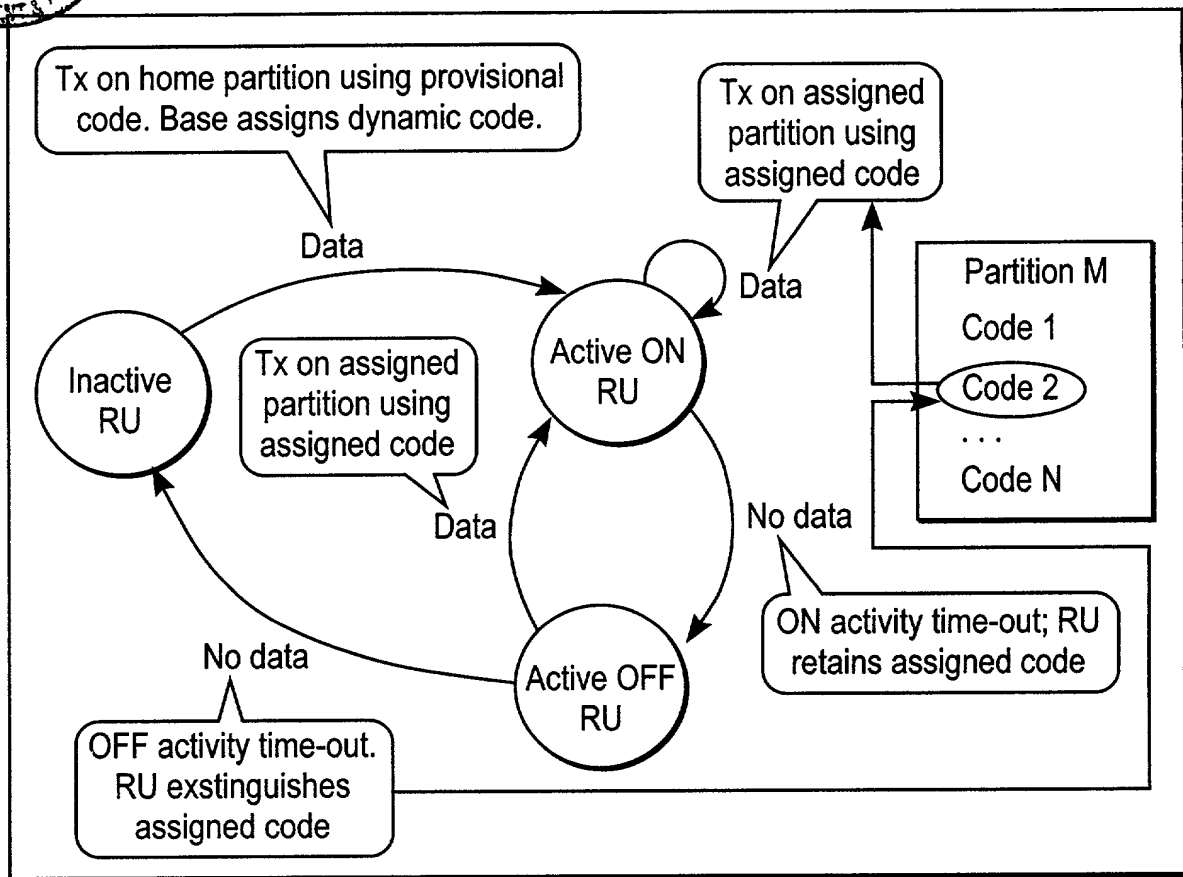


FIG. 35

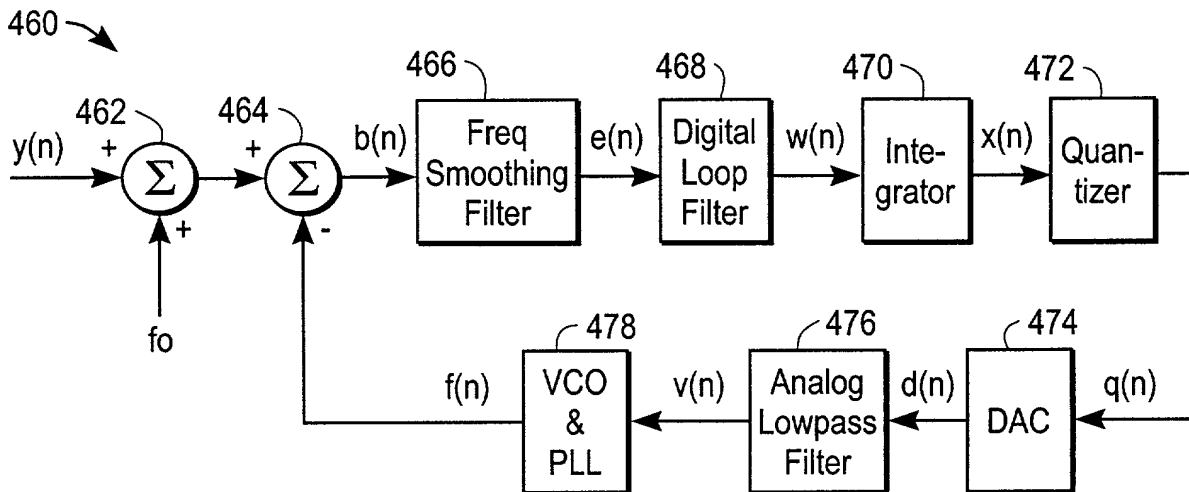


FIG. 36

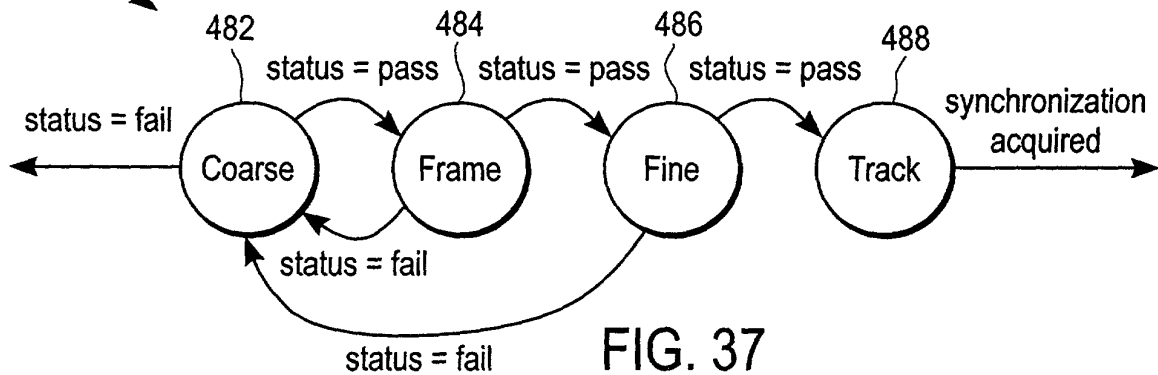


FIG. 37

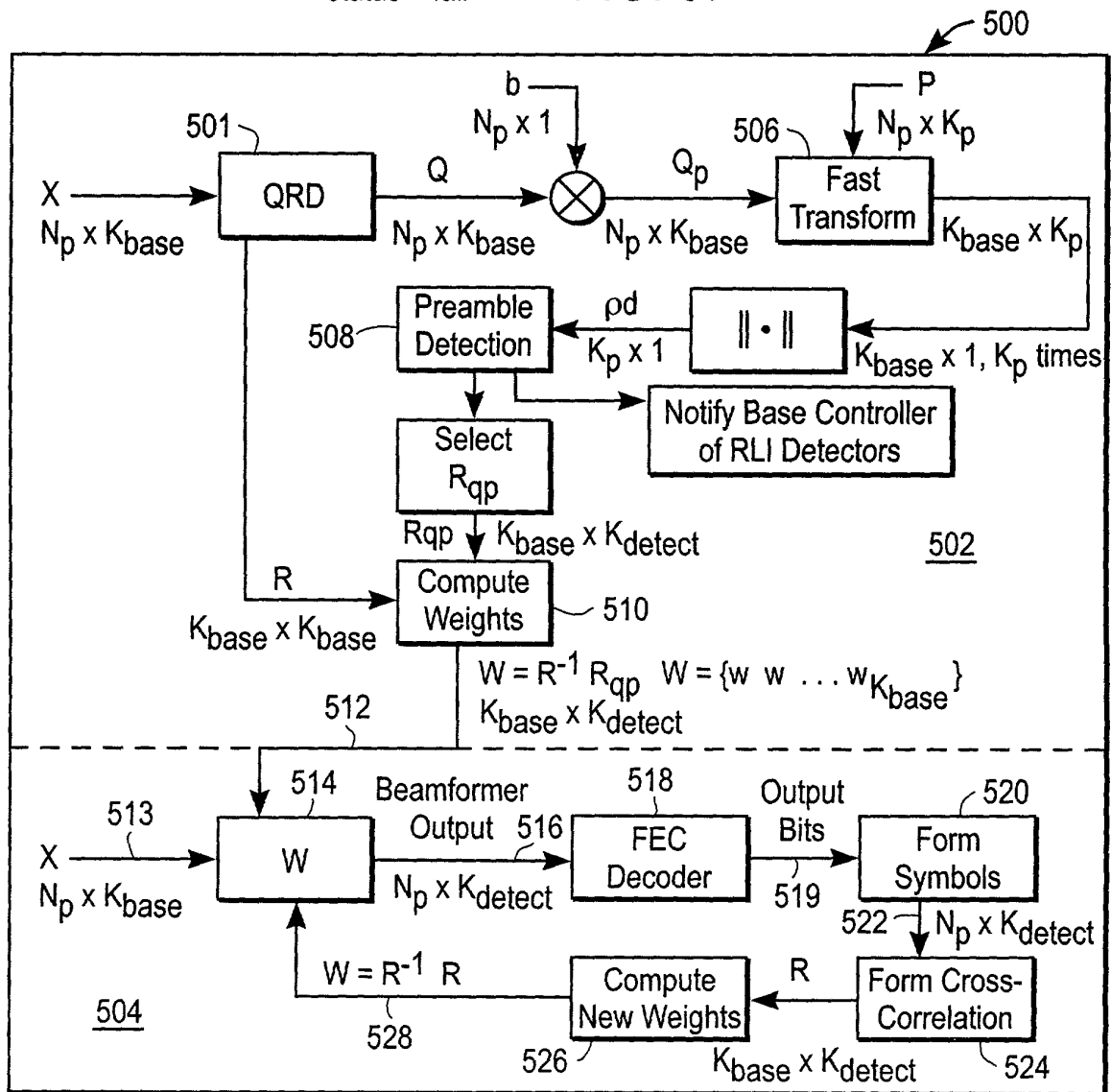


FIG. 38

[illegible]



COPY OF PAPERS
ORIGINALLY FILED

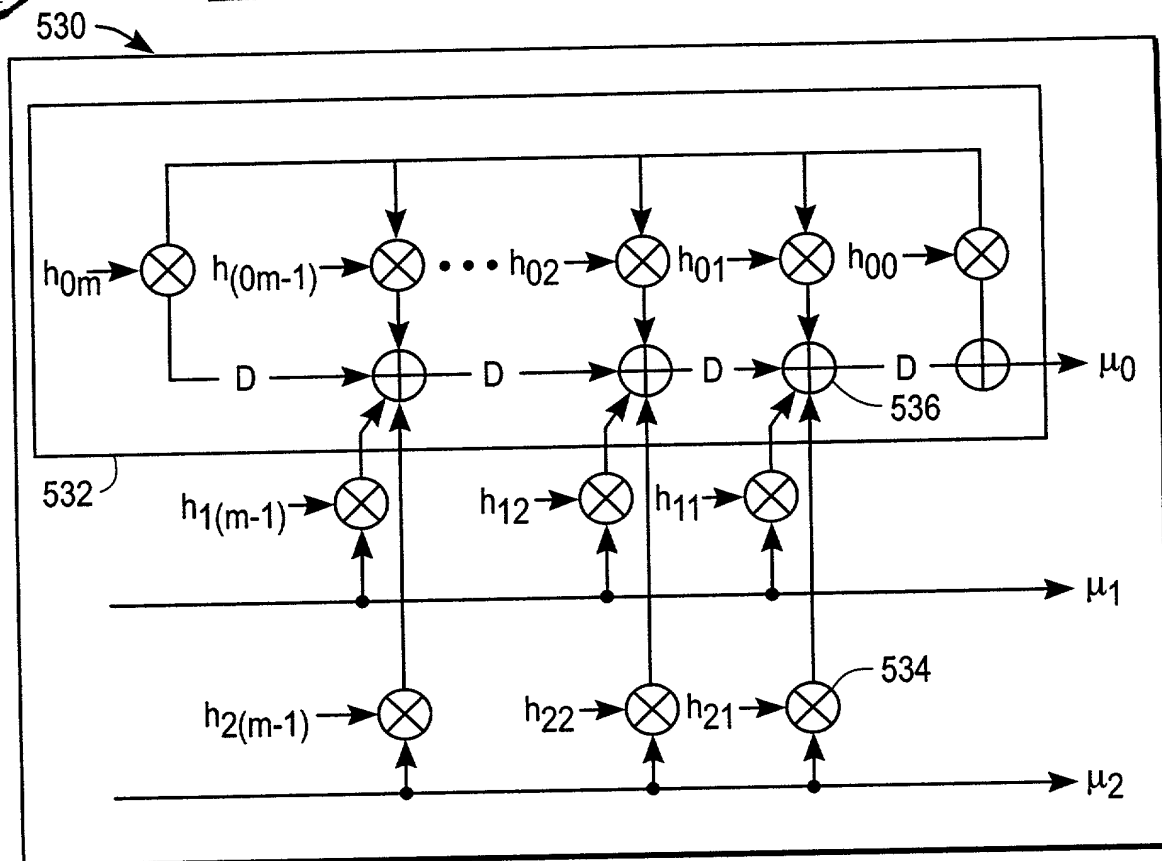


FIG. 39

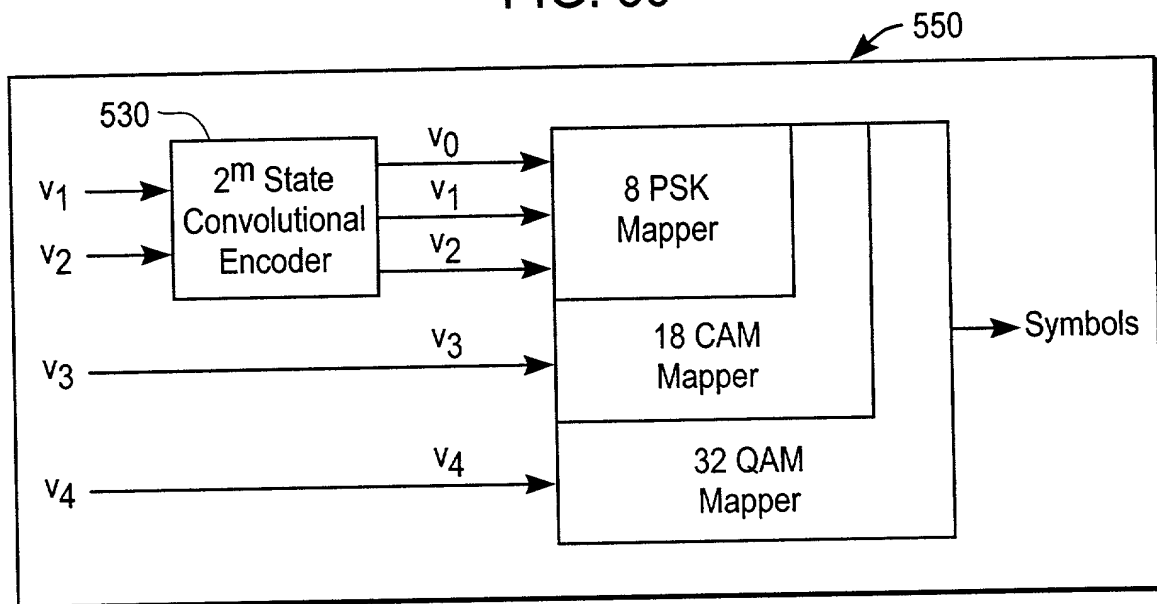
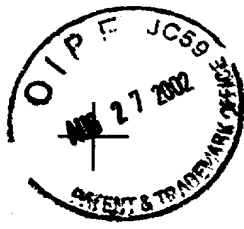


FIG. 40



COPY OF PAPERS
ORIGINALY FILED

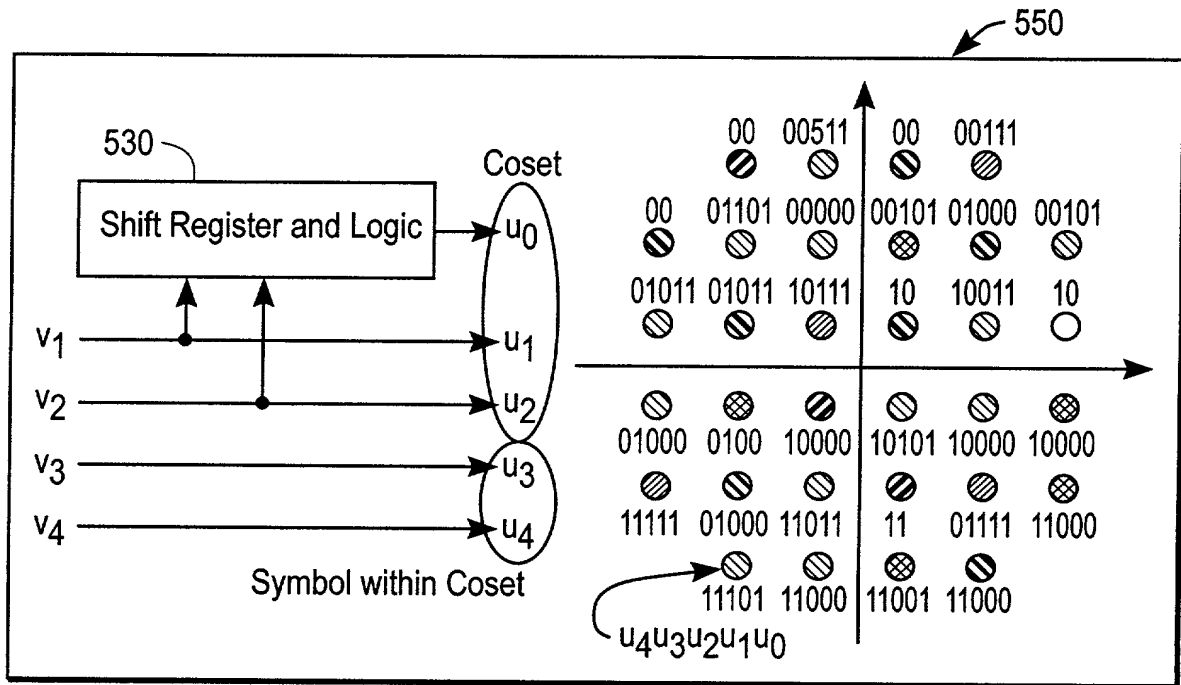


FIG. 41

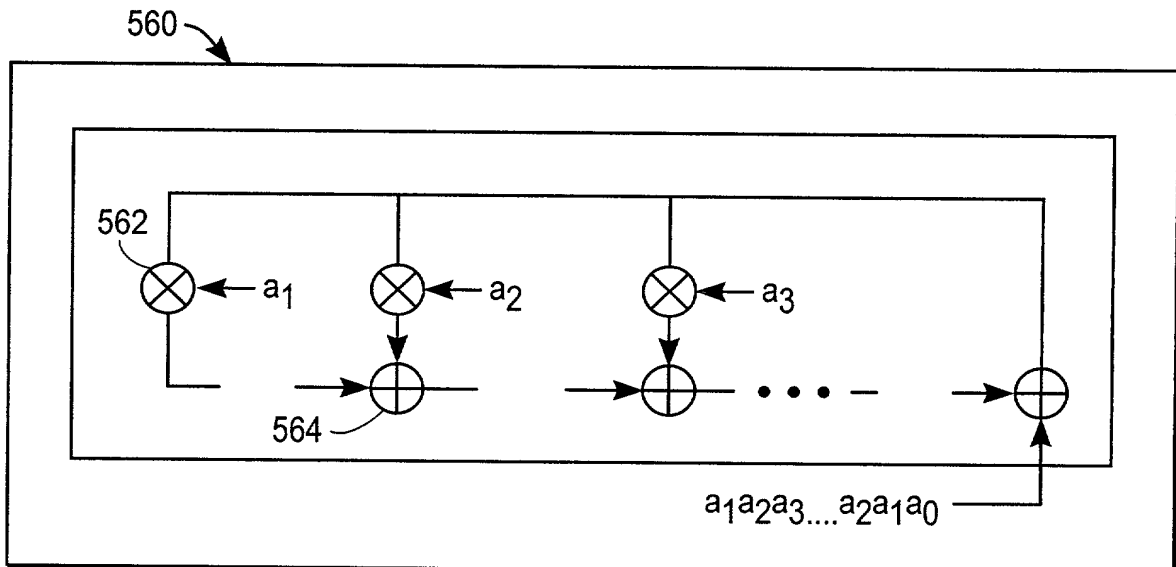
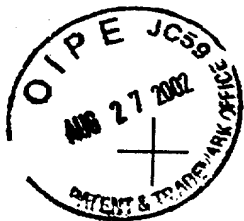


FIG. 42



COPY OF PAPERS
ORIGINALLY FILED

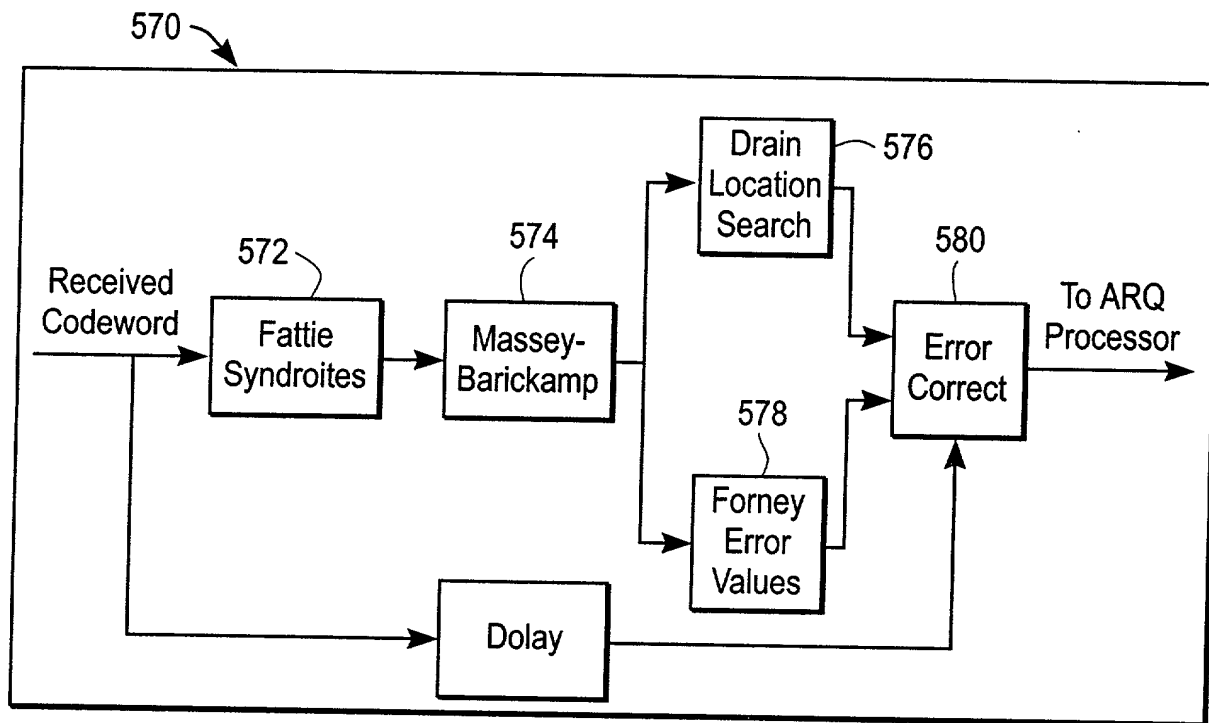


FIG. 43

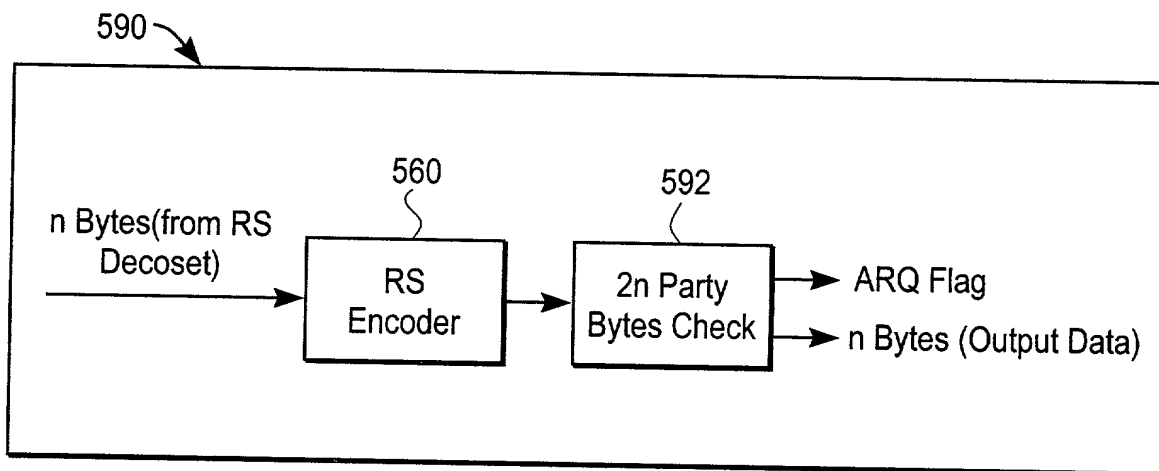
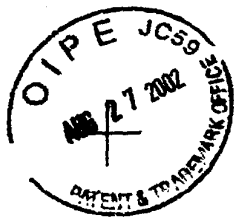


FIG. 44



COPY OF PAPERS
ORIGINALLY FILED

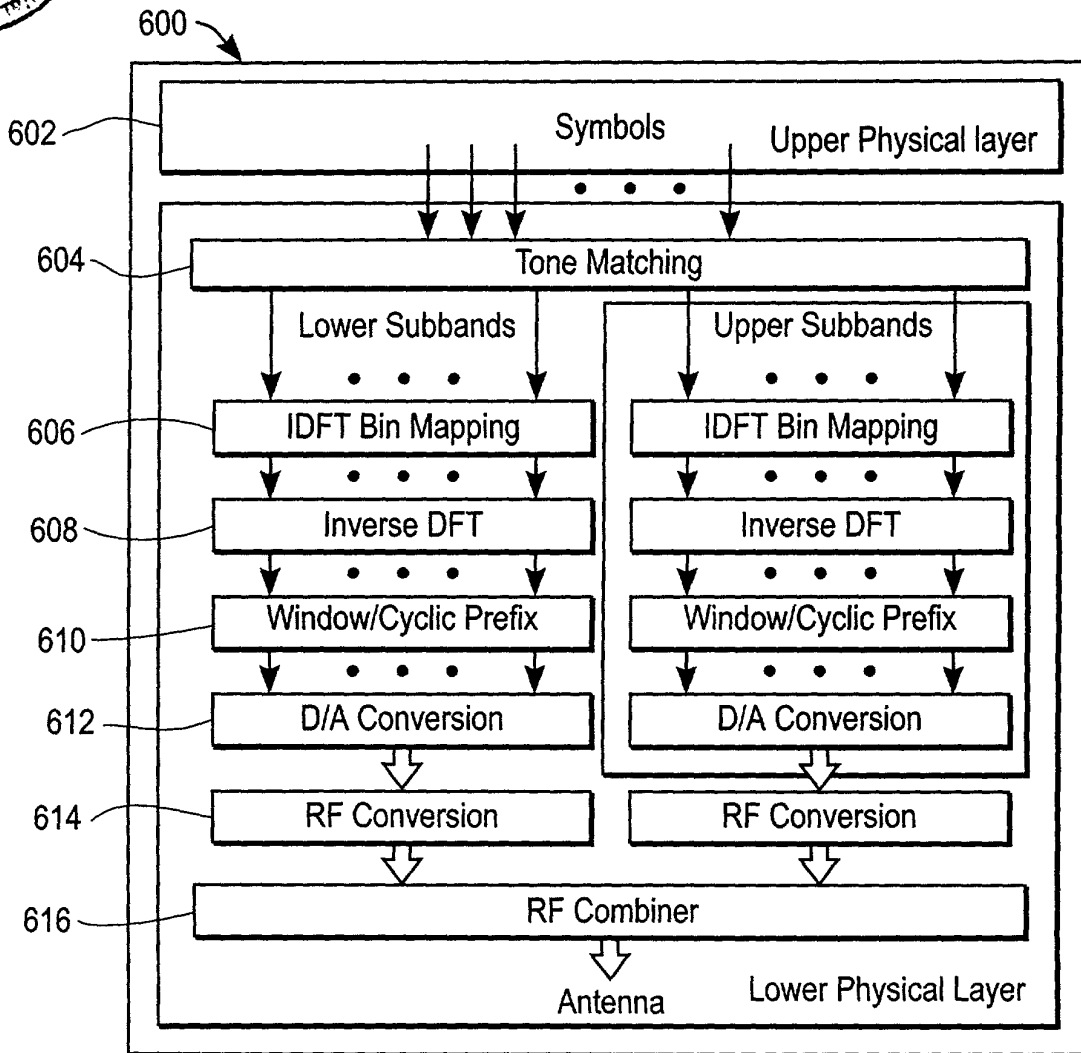


FIG. 45

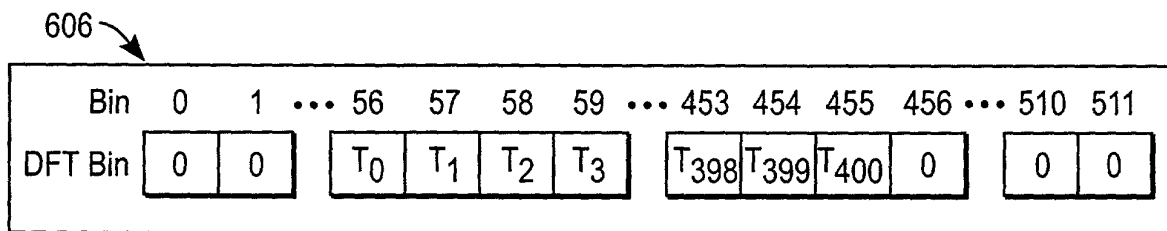
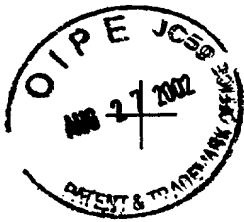


FIG. 46



COPY OF PAPERS
ORIGINALLY FILED

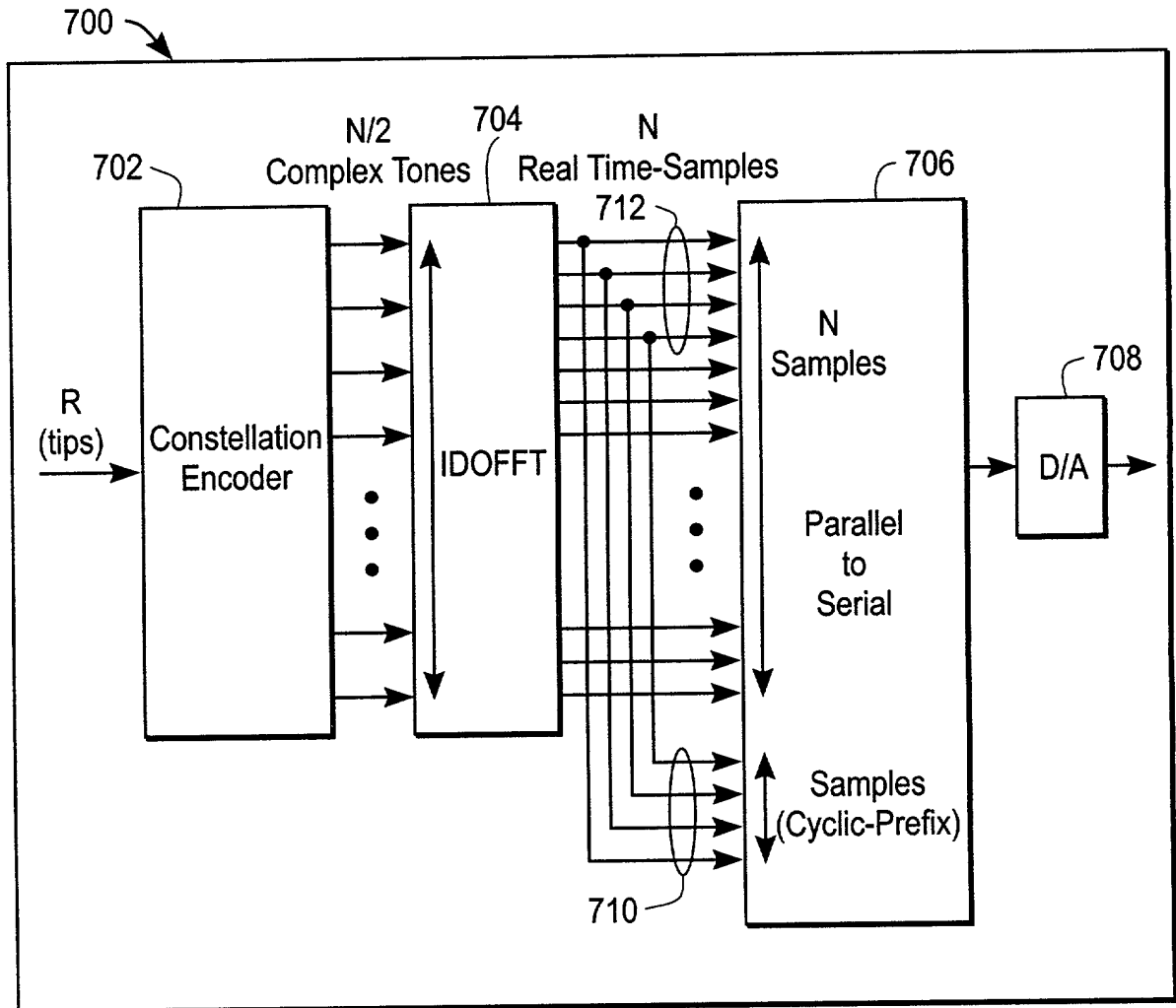
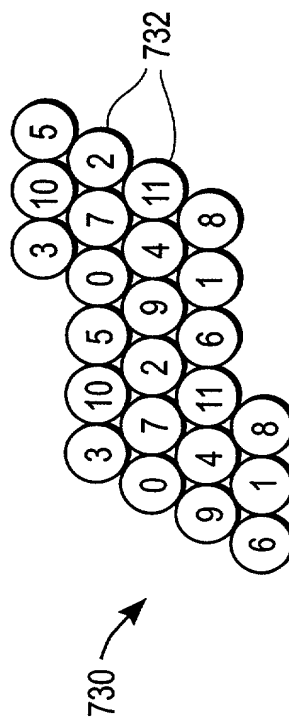
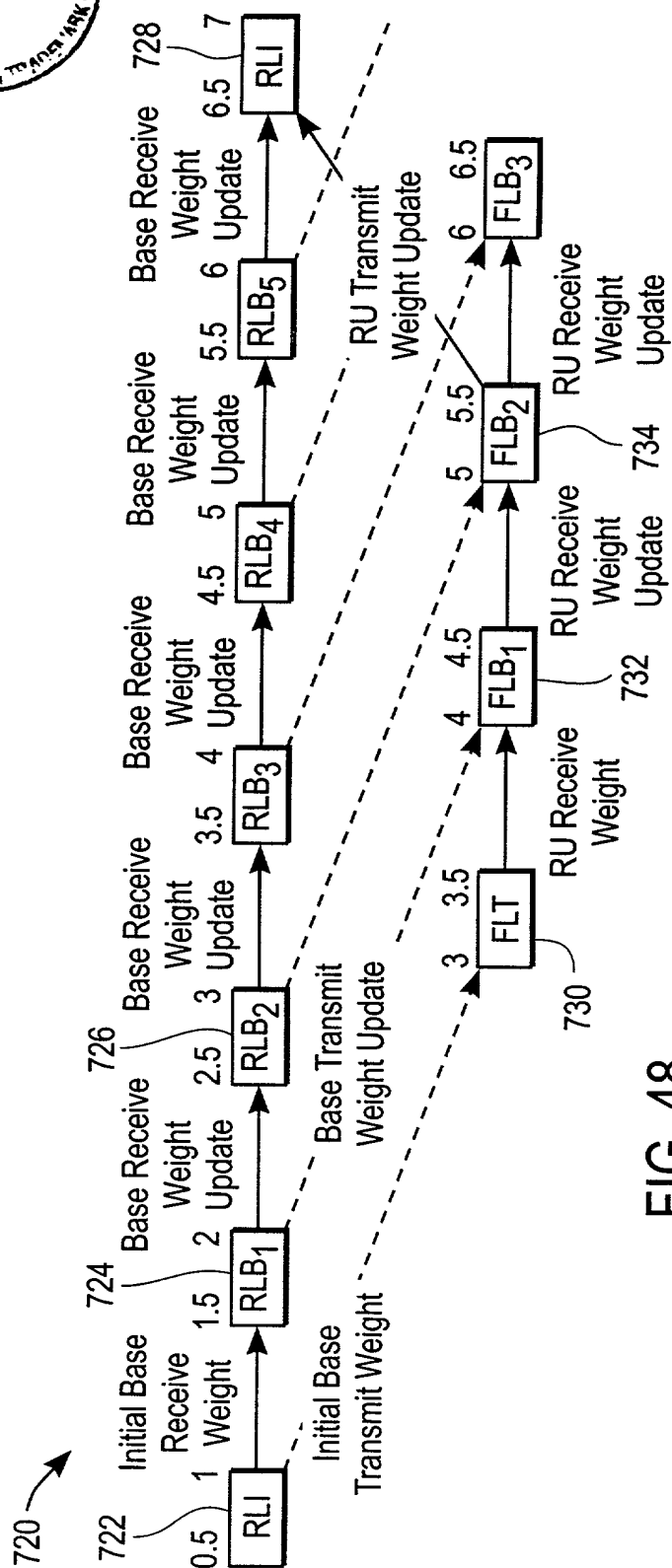


FIG. 47





COPY OF PAPERS
ORIGINALLY FILED

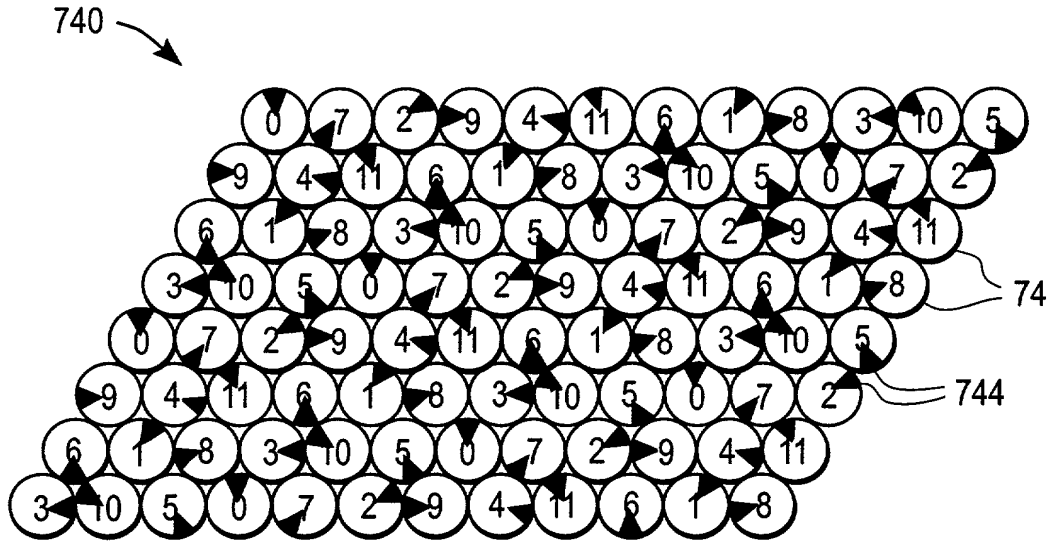


FIG. 50

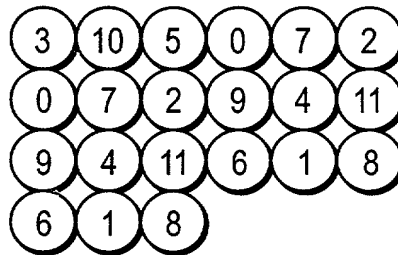
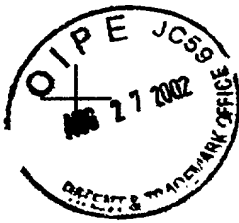


FIG. 51





COPY OF PAPERS
ORIGINALLY FILED

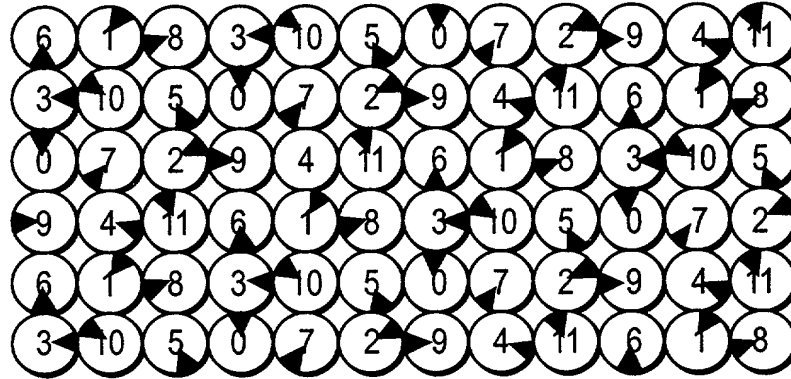


FIG. 52

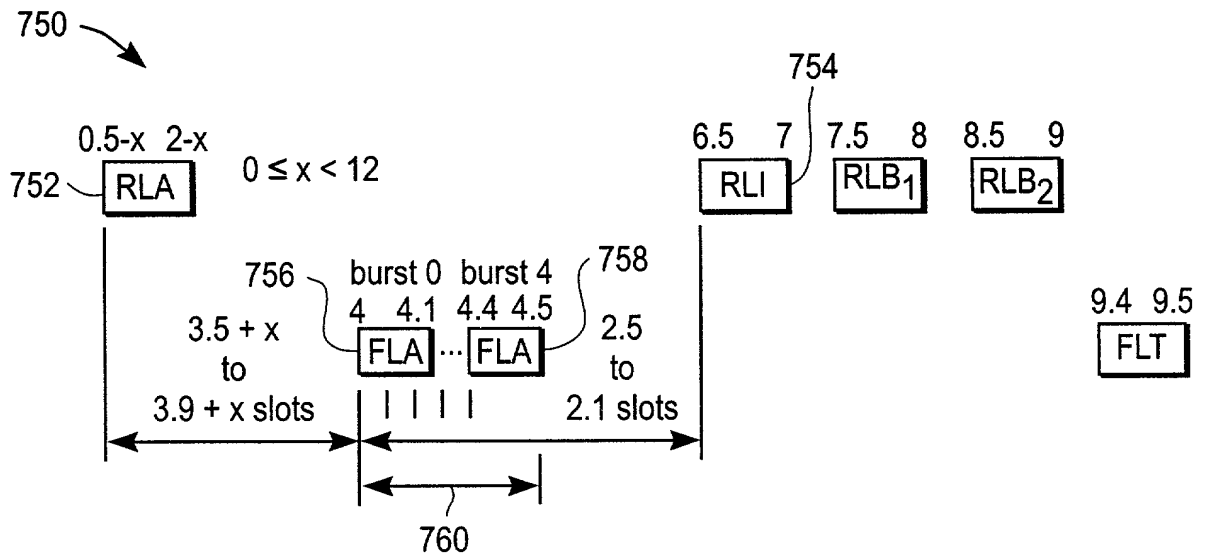
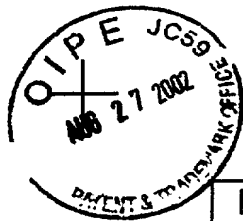


FIG. 53



COPY OF PAPERS
ORIGINALLY FILED

Band	Bandwidth (MHz)	Subbands	Guard Bands (MHz)
WCS (A & B)	2 x 5	3	0.625
WCS (C/D)	2 x 5	2	1.250
MMDS	2 x 12	8	1.000

FIG. 54

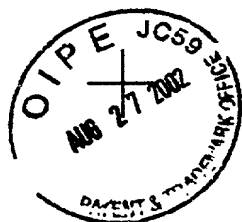
Band of Interest	Channel Bandwidth (MHz)	Number of Subbands	Active Bandwidth (MHz)	Guard Band on each side of active band (MHz)
UHF, WCS PCS	5	3	3.75	0.625
	10	7	8.75	0.625
	15	10	12.5	1.25
MMDS	3	2	2.5	0.25
	6	4	5	0.5
	12	8	10	1
3.5 GHz	3.5	2	2.5	0.5
	7	4	5	1
	14	8	10	2
3.65 GHz	25	16	20	2.5

FIG. 55

Tone per burst	16	16	16	16	16	16
Information bits per tone	4	4	3	3	2	2
Bits per burst	64	64	48	48	32	32
Bursts per slot	5	4	5	4	5	4
Bits per bearer slot	320	256	240	192	160	128
Bits per frame	1600	1280	1200	960	800	640
Partition rate (kbps)	80	64	60	48	40	32
Full rate (kbps)	1920	1536	1440	1152	960	768

FIG. 56



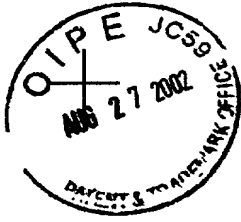


COPY OF PAPERS
ORIGINALLY FILED

$i_1 \backslash i_0$	$i_0=0$	$i_0=1$	$i_0=2$	$i_0=3$	$i_0=4$	$i_0=5$	$i_0=6$	$i_0=7$	...	$i_0=62$	$i_0=63$
$i_1=0$	X	a=0	a=64	a=128	a=192	...	a=3712	a=3776	a=3840	a=3904	a=3968
$i_1=1$	a=3969	X	a=1	a=65	a=129	...	a=3649	a=3713	a=3777	a=3841	a=3905
$i_1=2$	a=3906	a=3970	X	a=2	a=66	...	a=3586	a=3650	a=3714	a=3778	a=3842
$i_1=3$	a=3843	a=3907	a=3971	X	a=3	...	a=3523	a=3587	a=3651	a=3715	a=3779
$i_1=4$	a=3780	a=3844	a=3908	a=3972	X	...	a=3460	a=3524	a=3588	a=3652	a=3716
$i_1=5$	...	...	...	...	...	...	...	...	...	...	...
$i_1=6$	a=315	a=379	a=443	a=507	a=571	...	X	a=59	a=123	a=187	a=251
$i_1=7$	a=252	a=316	a=380	a=444	a=508	...	a=4028	X	a=60	a=124	a=188
...	a=189	a=253	a=317	a=381	a=445	...	a=3965	a=4029	X	a=61	a=125
$i_1=62$	a=126	a=190	a=254	a=318	a=382	...	a=3902	a=3966	a=4030	X	a=62
$i_1=63$	a=63	a=127	a=191	a=255	a=319	...	a=3839	a=3903	a=3967	a=4031	X

FIG. 57





COPY OF PAPERS
ORIGINALLY FILED

```
function fli = make_fli (codeword_descriptor)
% function fli = make_fli (codeword_descriptor)
% Synthesize a scaled 16 by 1 FLI codeword.
% 0 <= codeword_descriptor < 4096

% select the octal digits from the codeword descriptor
i0 = bitand (codeword_descriptor, -7);
i1 = bitand (bitshift (codeword_descriptor, -3), 7);
i2 = bitand (bitshift (codeword_descriptor, -6), 7);
i3 = bitand (bitshift (codeword_descriptor, -9), 7);
generatingVector = [i0, i1, i2, i3] % generating vector

% the following kronecker basis function provides 4096 total codes
% and is based on an 8-star constellation
h = [ ...
      1.1923+0.2372j, 2.0960+0.4169j, 1.1923+0.2372j, 2.0960+0.4169j, ...
      1.1923+0.2372j, 2.0960+0.4169j, 1.1923+0.2372j, 2.0960+0.4169j; ...
      2.0960+0.4169j, 0.6754+1.0108j, -0.4169+2.0960j, -1.0108+0.6754j, ...
      -2.0960+0.4169j, -0.6754-1.0108j, 0.4169-2.0960j, 1.0108 -0.6754j;

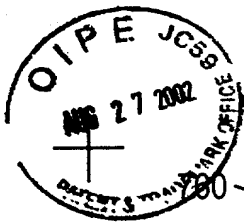
% make the kronecker codeword
fli = 1;
for jj=1:4
    fli = kron (h(:, generatingVector(jj)+1), % matlab is one based
end

% quantize the codeword
fli = round (fli);
```

FIG. 58

204280" 4E62600T





COPY OF PAPERS
ORIGINALLY FILED

762

```
% fls_super_results_12.m
% Lower 12 bits are the base tones, upper 4 bits are the superframe tones.
% First index (row) is the base, second (column) is the superframe

Codeword = [ ...
23125 39509 27221 55893 6741 43605 47701 10837 51797 31317 59989 19029; ...
40269 36173 64845 44365 56653 11597 48461 15693 27981 60749 52557 32077; ...
47781 60069 27301 15013 10917 39589 51877 2725 35493 19109 43685 55973; ...
13669 54629 5477 34149 62821 21861 9573 38245 42341 46437 30053 50533; ...
27309 10925 55981 43693 47789 51885 6829 35501 15021 19117 39597 23213; ...
21813 38197 34101 5429 42293 54581 9525 62773 46389 17717 50485 58677; ...
27477 56149 11093 43861 19285 39765 6997 23381 52053 35669 60245 47957; ...
42389 17813 46485 50581 21909 1429 9621 62869 30101 45677 26005 58773; ...
42709 38613 46805 14037 18133 50901 5845 22229 54997 59093 34517 30421; ...
38217 46409 25929 42313 5449 9545 50505 13641 54601 17737 21833 30025; ...
4693 12885 21077 16981 53845 41557 49749 62037 45653 29269 25173 37461; ...
59049 34473 5801 9897 54953 13993 26281 18089 38569 42665 46761 50857; ...
];

% 5A55 9A55 6A55 DA55 1A55 AA55 BA55 2A55 CA55 7A55 EA55 4A55
% 9D4D 8D4D FD4D AD4D DD4D 2D4D BD4D 3D4D 6D4D ED4D CD4D 7D4D
% BAA5 EAA5 6AA5 3AA5 2AA5 9AA5 CAA5 0AA5 8AA5 4AA5 AAA5 DAA5
% 3565 D565 1565 8565 F565 5565 2565 9565 A565 B565 7565 C565
% 6AAD 2AAD DAAD AAAD BAAD CAAD 1AAD 8AAD 3AAD 4AAD 9AAD 5AAD
% 5535 9535 8535 1535 A535 D535 2535 F535 B535 4535 C535 E535
% 6B55 DB55 2B55 AB55 4B55 9B55 1B55 5B55 CB55 8B55 EB55 BB55
% A595 4595 B595 C595 5595 0595 2595 F595 7595 D595 6595 E595
% A6D5 96D5 B6D5 36D5 46D5 C6D5 16D5 56D5 D6D5 E6D5 86D5 76D5
% 9549 B549 6549 A549 1549 2549 C549 3549 D549 4549 5549 7549
% 1255 3255 5255 4255 D255 A255 C255 F255 B255 7255 6255 9255
% E6A9 86A9 16A9 26A9 D6A9 36A9 66A9 46A9 96A9 A6A9 B6A9 C6A9

Nb = 12; % Number of tones in base
Ns = 4; % Number of tones in superframe sequence
Nt = 16; % Total number of tones
```

FIG. 59

764

```
function fls = make_fls(base, superframe)
% function fls = make_fls(base, superframe)
% base is the base offset code and varies from 0 to 11
% superframe is the slot sequence number and varies from 0 to 11

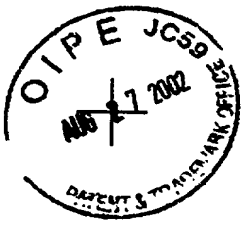
fls_super_results_12 % read in the codeword descriptor array

t = zeros(Nt, 1);
for jj=1:Nt
    t(jj) = 2^(jj-1); % form a vector of walking ones
end

cw = codeword(base+1, superframe+1); % select codeword descriptor
bv = (bitand(cw,t) ~= 0) * 2 - 1; % make BPSK vector
fls = (15 + 15j) * bv; % scale the BPSK vector
```

FIG. 60





COPY OF PAPERS
ORIGINALLY FILED

770 →

772a

772b

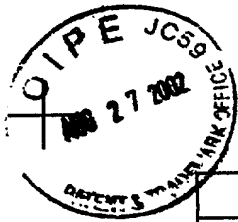
774

Partition			0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Frame Slot Burst																											
0	0	0	0	1					0	1					0	1				0	1						
		3	1						1						1					1							
0	1	0		1						1						1					1						
		3		0						0						0					0						
0	2	0			2						2						2						2				
		3			3						3						3						3				
0	3	0				3						3						3						3			
		3				2						2						2						2			
0	4	0					4						4						4						4		
		3					5						5						5						5		
0	5	0						5						5						5						5	
		3						4						4						4						4	
1	6	0		6					6						6					6							
		3		7					7						7					7							
1	7	0								7						7						7					
		3								6						6						6					
1	8	0			8						8						8						8				
		3			9						9						9						9				
1	9	0				9						9						9						9			
		3				8						8						8						8			
1	10	0					10						10						10						10		
		3					11						11						11						11		
1	11	0						11						11						11						11	
		3						10						10						10						10	
2	12	0		0					0						0					0							
		3		1					1						1					1							
2	13	0			1					1						1					1						
		3			0					0						0					0						
2	14	0				2					2						2						2				
		3				3					3						3						3				
2	15	0					3					3						3						3			
		3					2					2						2						2			
2	16	0						4					4						4						4		
		3						5					5						5						5		
2	17	0							5					5						5						5	
		3							4					4						4						4	
3	18	0		6					6						6					6							
		3		7					7						7					7							
3	19	0			7					7						7						7					
		3			6					6						6						6					
3	20	0				8					8						8						8				
		3				9					9						9						9				
3	21	0					9					9						9						9			
		3					8					8						8						8			
3	22	0						10					10						10						10		
		3						11					11						11						11		
3	23	0							11					11						11						11	
		3							10					10						10						10	

FIG. 61

202280-262600T



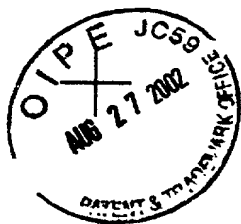


COPY OF PAPERS
ORIGINALLY FILED

Partition			0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Frame	Slot	Burst																									
0	0	0	0		1			0		1		0		1		0		1		0		1		0			
		3	1		0			1		0		1		0		1		0		1		0		1			
0	1	0																									
		3																									
0	2	0		2		3			2		3		2		3		2		3		2		3		2		
		3		3		2			3		2		3		2		3		2		3		2		3		
0	3	0																									
		3																									
0	4	0			4		5		4		5		4		5		4		5		4		5		4		
		3			5		4		5		4		5		4		5		4		5		4		5		
0	5	0																									
		3																									
1	6	0	7		6		7		6		7		6		7		6		7		6		7		6		
		3	6		7		6		7		6		7		6		7		6		7		6		7		
1	7	0																									
		3																									
1	8	0		9		8		9		8		9		8		9		8		9		8		9		8	
		3		8		9		8		9		8		9		8		9		8		9		8		9	
1	9	0																									
		3																									
1	10	0			11		10		11		10		11		10		11		10		11		10		11		
		3			10		11		10		11		10		11		10		11		10		11		10		
1	11	0																									
		3																									
2	12	0	0		1		0		1		0		1		0		1		0		1		0		1		
		3	1		0		1		0		1		0		1		0		1		0		1		0		
2	13	0																									
		3																									
2	14	0		2		3		2		3		2		3		2		3		2		3		2		3	
		3		3		2		3		2		3		2		3		2		3		2		3		2	
2	15	0																									
		3																									
2	16	0			4		5		4		5		4		5		4		5		4		5		4		
		3			5		4		5		4		5		4		5		4		5		4		5		
2	17	0																									
		3																									
3	18	0	7		6		7		6		7		6		7		6		7		6		7		6		
		3	6		7		6		7		6		7		6		7		6		7		6		7		
3	19	0																									
		3																									
3	20	0		9		8		9		8		9		8		9		8		9		8		9		8	
		3		8		9		8		9		8		9		8		9		8		9		8		9	
3	21	0																									
		3																									
3	22	0			11		10		11		10		11		10		11		10		11		10		11		
		3			10		11		10		11		10		11		10		11		10		11		10		
3	23	0																									
		3																									

FIG. 62

10092937-082702

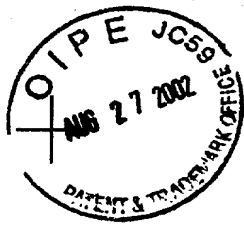


COPY OF PAPERS
ORIGINALLY FILED

Partition			0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Frame	Slot	Burst																									
0	0	0	a					α						Y						Ψ							
		3	a					α						Y						Ψ							
0	1	0	b					β						X						[H]							
		3	b					β						X						[H]							
0	2	0	c					χ							W					Ω							
		3	c					χ							W					Ω							
0	3	0	d					δ							V					Σ							
		3	d					δ							V					Σ							
0	4	0	e					ε					ε						U					∴			
		3	e					ε					ε						U					∴			
0	5	0					f						φ						T							I	
		3					f						φ						T							I	
1	6	0	S					γ					g						Σ								
		3	S					γ					g						Σ								
1	7	0	R					η						h						[I]							
		3	R					η						h						[I]							
1	8	0	Q					ι						i						Θ							
		3	Q					ι						i						Θ							
1	9	0		P				φ							j					Π							
		3		P				φ							j					Π							
1	10	0			O							κ					k									}	
		3			O							κ					k									}	
1	11	0			N							λ					l]]	
		3			N							λ					l]]	
2	12	0	L					Λ					m							μ							
		3	L					Λ					m							μ							
2	13	0	K											n						v							
		3	K											n						v							
2	14	0		J				θ							o						~						
		3		J				θ							o						~						
2	15	0			I					*					p						π						
		3			I					*					p						π						
2	16	0			H										q						Θ						
		3			H										q						Θ						
2	17	0			G								Γ						r]]	
		3			G								Γ						r]]	
3	18	0	s					Φ						F						σ							
		3	s					Φ						F						σ							
3	19	0	t					&						E						τ							
		3	t					&						E						τ							
3	20	0		u						Δ					D						υ						
		3		u						Δ					D						υ						
3	21	0			v					X						c					ω						
		3			v					X						c					ω						
3	22	0			w							⊥					B						ω				
		3			w							⊥					B						ω				
3	23	0				x						%						A						Σ			
		3				x						%						A						Σ			

FIG. 63





COPY OF PAPERS IN
ORIGINAL FILED

COPY OF PAPERS
ORIGINALLY FILED

Burst ->	0	1	2	3	4
Time slot counter modulo 6	Partition in which the RU is directed to send an RLI				
0	20	2	8	14	20
1	3	9	15	21	3
2	10	16	22	4	10
3	17	23	5	11	17
4	0	6	12	18	0
5	13	19	1	7	13

FIG. 64

Burst ->	0	1	2	3	4
Time slot counter modulo 6	Partition in which the RU is directed to send an RLI				
0	8	11	2	5	8
1	3	6	9	0	3
2	10	1	4	7	10
3	5	8	11	2	5
4	0	3	6	9	0
5	1	4	7	10	1

FIG. 65

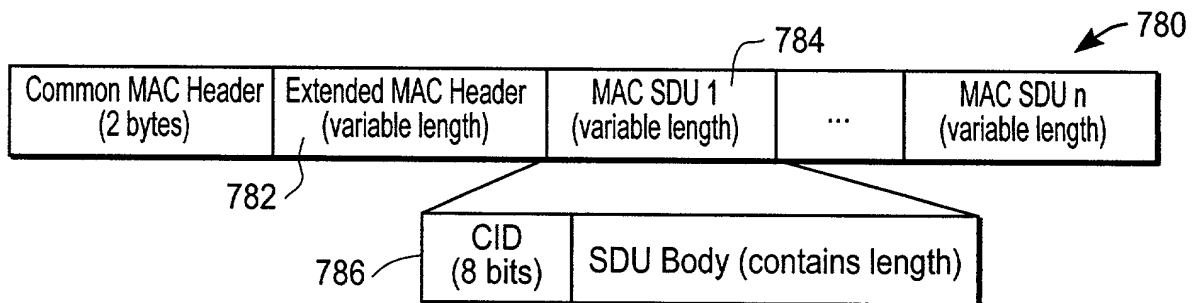


FIG. 66

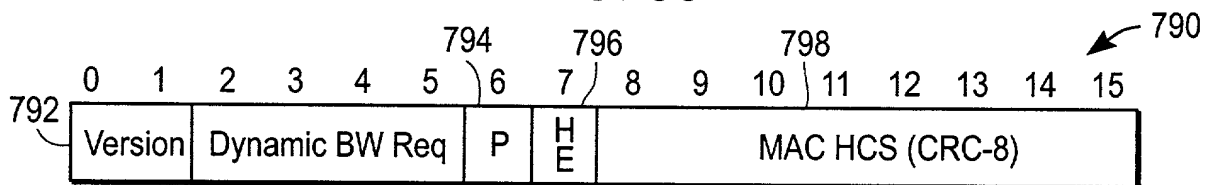


FIG. 67

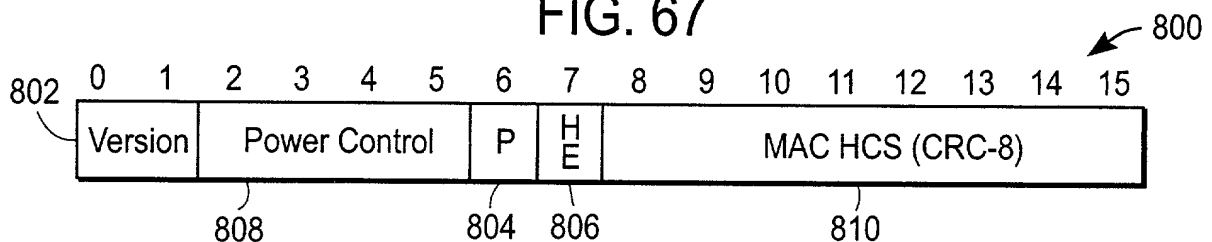


FIG. 68



COPY OF PAPERS
ORIGINALLY FILED

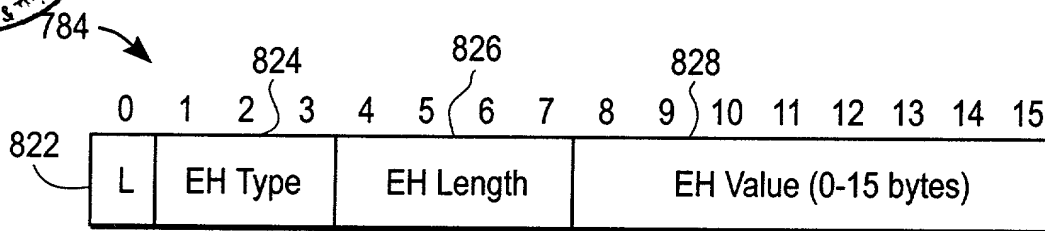


FIG. 69

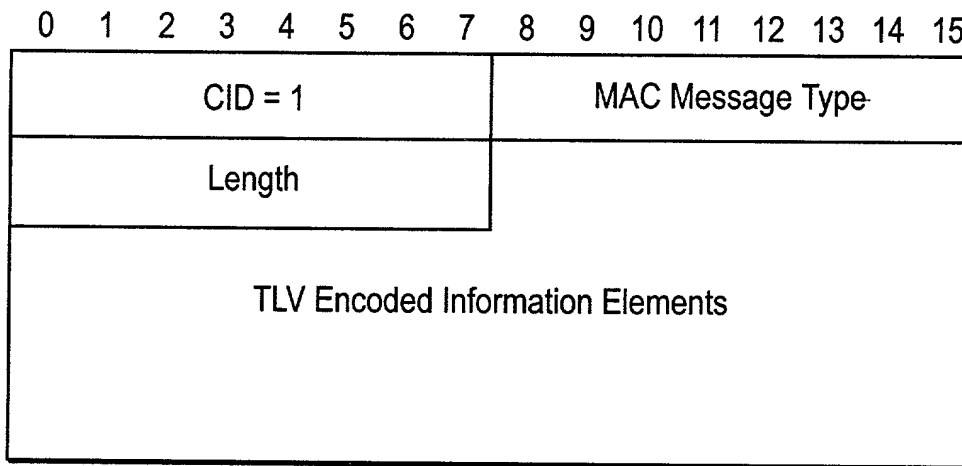
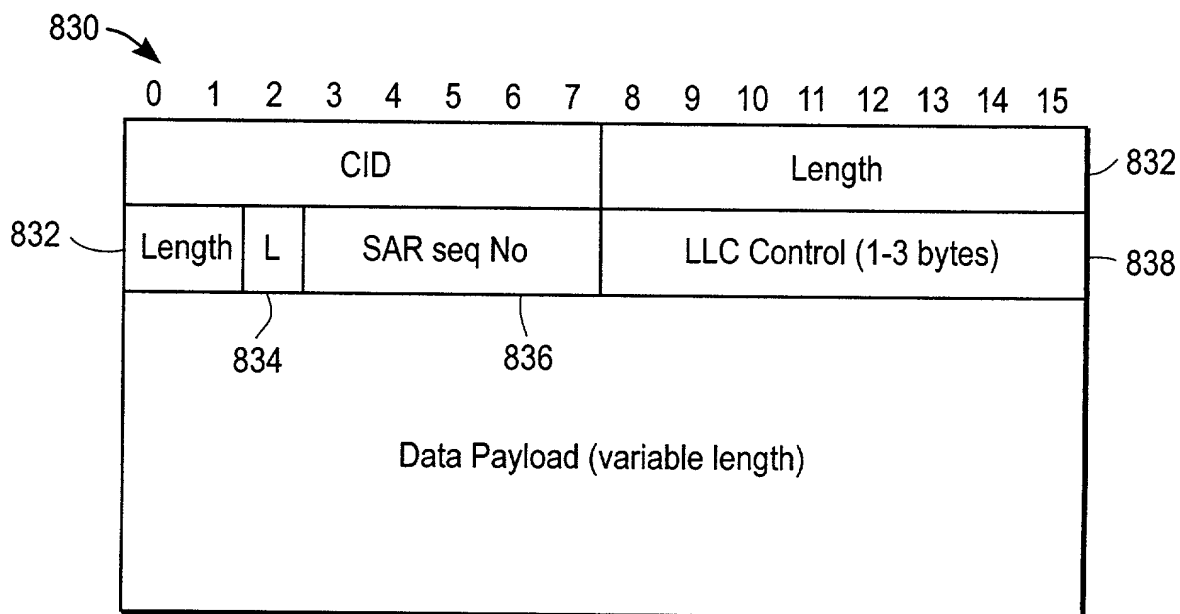


FIG. 70



• L = Last Segment

FIG. 71

20090937-082702





COPY OF PAPERS
ORIGINALLY FILED

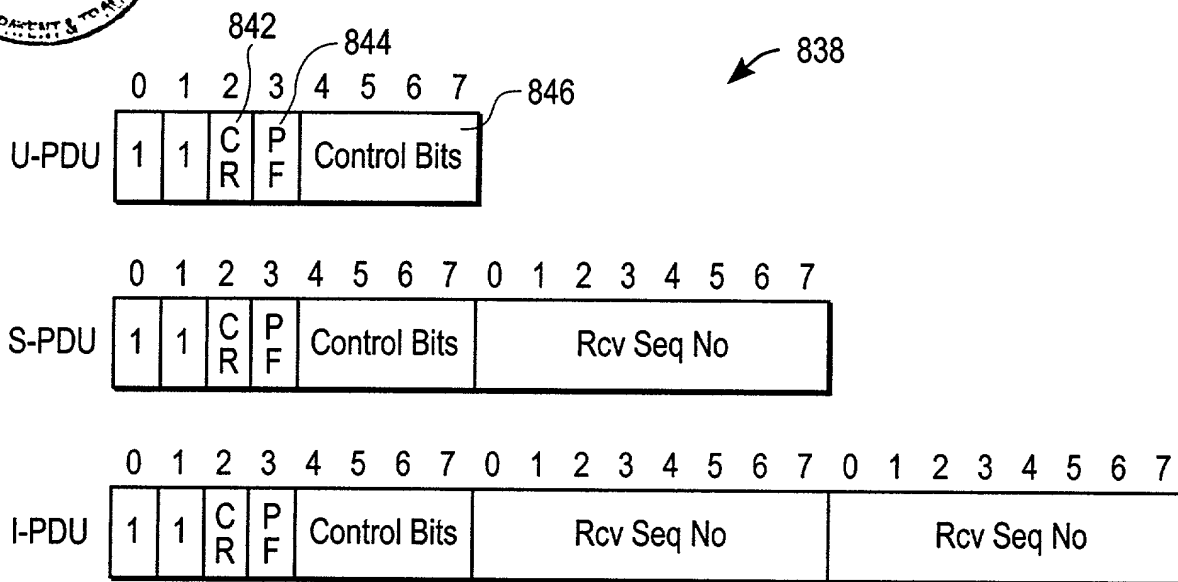


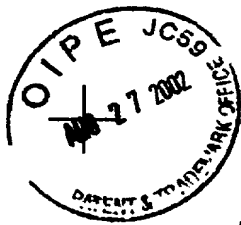
FIG. 72

Modulation Order	4 Bits/Sym		3 Bits/Sym		2 Bits/Sym	
Link Direction	Forward	Reverse	Forward	Reverse	Forward	Reverse
Bits/Symbol	4	4	3	3	2	2
Symbols/Burst	16	16	16	16	16	16
Bursts/Slot	5	5	5	4	5	4
Bits/Slot	320	256	240	192	160	128
Bytes/Slot	40	32	30	24	20	16
Slots/Frame	5	5	5	5	5	5
Bits/Frame	1600	1280	1200	960	800	640
Bytes/Frame	200	160	150	120	100	80
Viterbi Tail Byte(*)	1	1	1	1	1	1
RS Check Bytes	28	28	18	18	10	10
Common MAC Header	2	2	2	2	2	2
MAC SDU Header	169	129	129	99	87	67
Data SDU Header	6	6	6	6	6	6
Data Payload	163	123	123	93	81	61
Data Rate/Partition, kbps	65.2	49.2	49.2	37.2	32.4	24.4
Partitions/Subband	24	24	24	24	24	24
Data Rate/Subband, kbps	1564.8	1180.8	1180.8	892.8	777.6	585.6
Subband Data Rate/T1	1.02	0.77	0.77	0.58	0.51	0.38

FIG. 73

200907220001





COPY OF PAPERS
ORIGINALLY FILED

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

CID	Length (coded)	P T	L	SAR Seq No
IP Identification				
IP HCS				
UDP HCS				
RTP Seq No.				
RTP Time Stamp				
VoIP Payload (variable length)				
Ethernet FCS				

FIG. 74

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

CID	Length (coded)	P T	L	SAR Seq No
Compressed RTP Header	UDP HCS			
UDP HCS	VoIP HCS (CRC-8)			
VoIP Payload (variable length)				

FIG. 75

204280" 4E62600T





COPY OF PAPERS
ORIGINALLY FILED

Modulation Order	4 Bits/Sym		3 Bits/Sym		2 Bits/Sym		
Link Direction	Forward	Reverse	Forward	Reverse	Forward	Reverse	
Entry Slot	—	—	—	—	—	—	10 ms
Bearer Slot 1	40	32	30	24	20	16	
Bearer Slot 2	40	32	30	24	20	16	
Common MAC Header	2	2	2	2	2	2	
Mac SDU Length	78	62	58	46	38	30	
Bearer Slot 3	40	32	30	24	20	16	10 ms
Bearer Slot 4	40	32	30	24	20	16	
Bearer Slot 5(*)	39	31	29	23	19	15	
Common MAC Header	2	2	2	2	2	2	
MAC SDU Length	117	93	87	69	57	45	

(*) Viterbi tail byte occurs in the 5th bearer slot.

FIG. 76

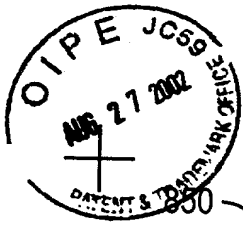
Frame Duration	20ms			10 ms		
Vocoder	G.711	G.726	G.729	G.711	G.726	G.729
Bit Rate, kbps	64.0	32.0	8.0	64.0	32.0	8.0
Voice Bytes	160	80	20	80	40	10
VoIP Overhead(*)	16	16	16	3	3	3
VoIP Payload Size	176	96	36	83	43	13
Voice SDU Header	2	2	2	3	3	3
4 Bits/Sym						
SDU Size Limit (RL)	129	129	129	62	62	62
No. Partitions	2	1	1/3	2	1	1/3
SDU Size	90x2	98	38	45+44	46	16
3 Bits/Sym						
SDU Size Limit (RL)	99	99	99	46	46	46
No. Partitions	2	1	1/2	2	1	1/2
SDU Size	90x2	98	38	45+44	46	16
2 Bits/Sym						
SDU Size Limit (RL)	67	67	67	30	30	30
No. Partitions	3	2	1	4	2	1
SDU Size	61x2+60	50x2	38	24x3+23	25+24	16

(*) Include RTP, UDP, IP, PPPoE, and Ethernet

FIG. 77

201280" 2262600T





COPY OF PAPERS
ORIGINALLY FILED

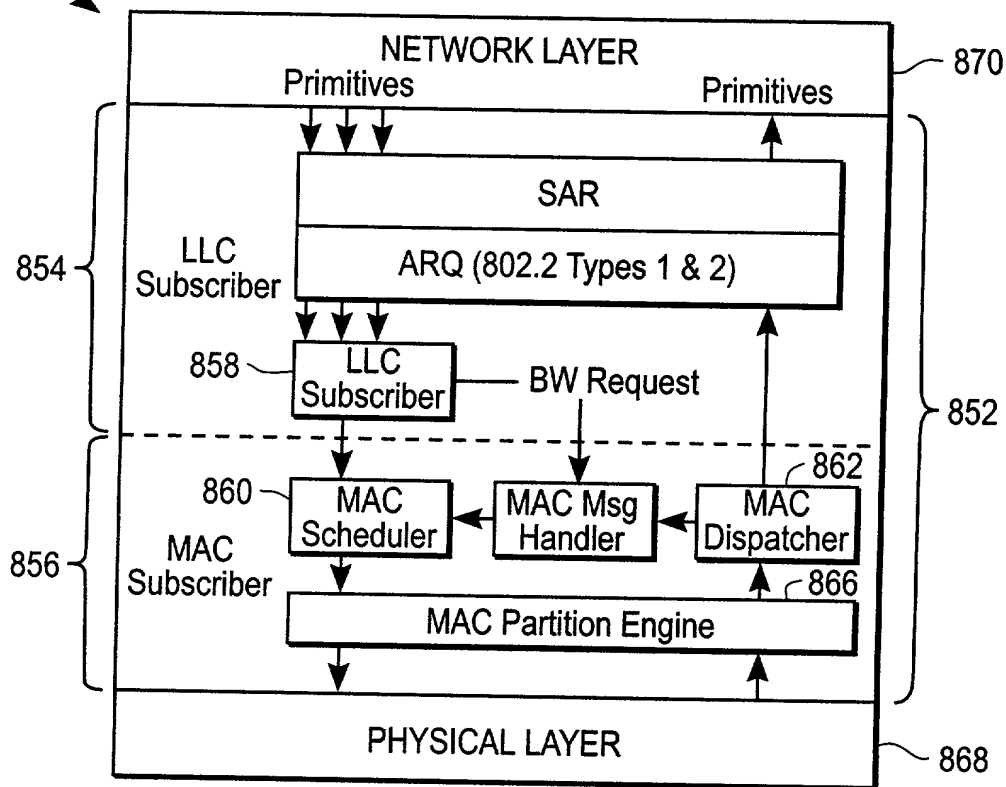


FIG. 78

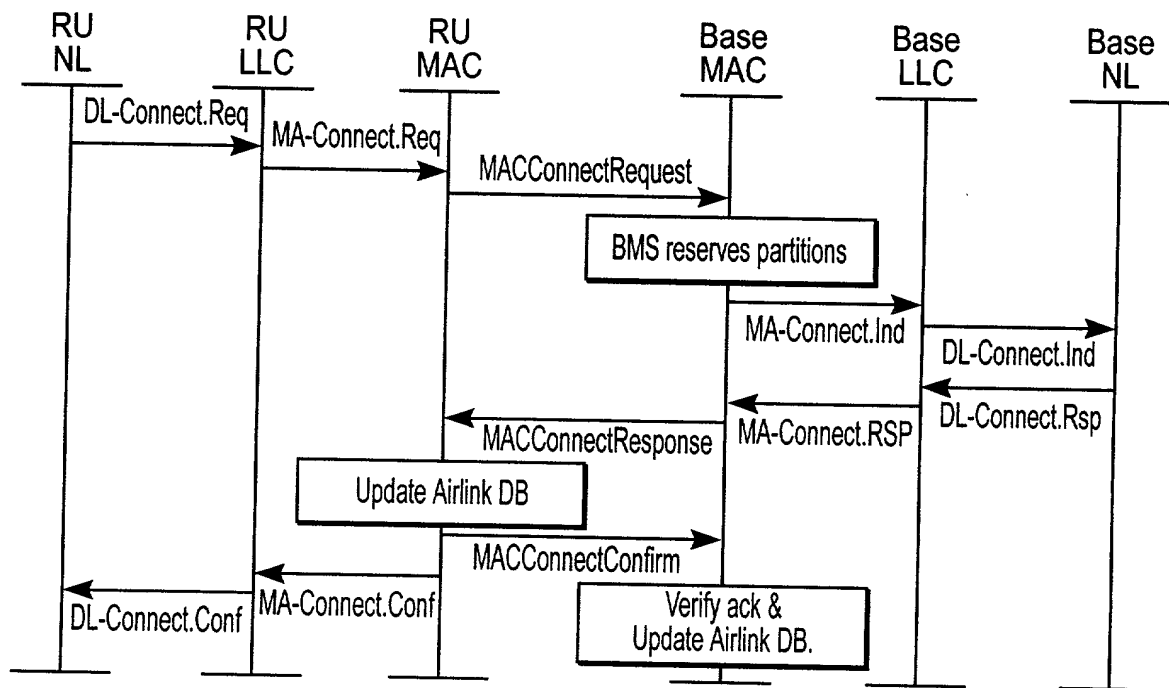
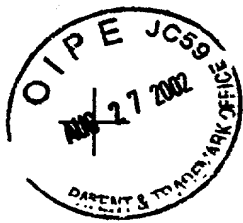


FIG. 79

20090937-0870





COPY OF PAPERS
ORIGINALLY FILED

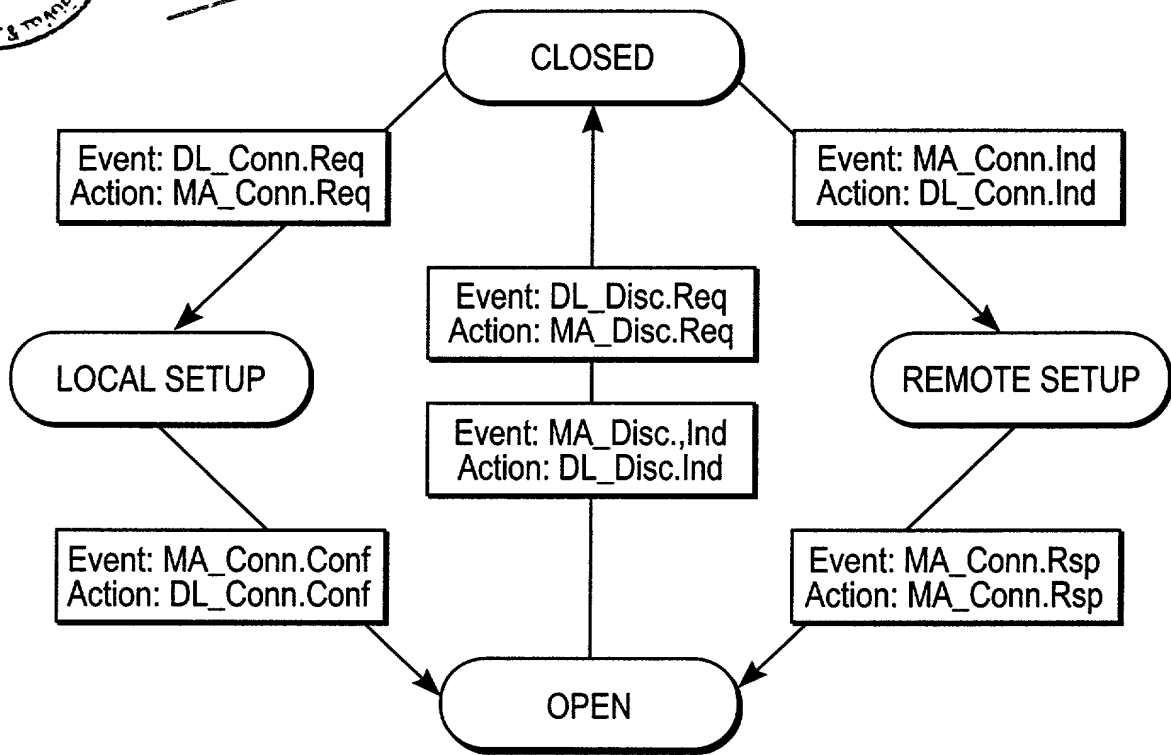


FIG. 80

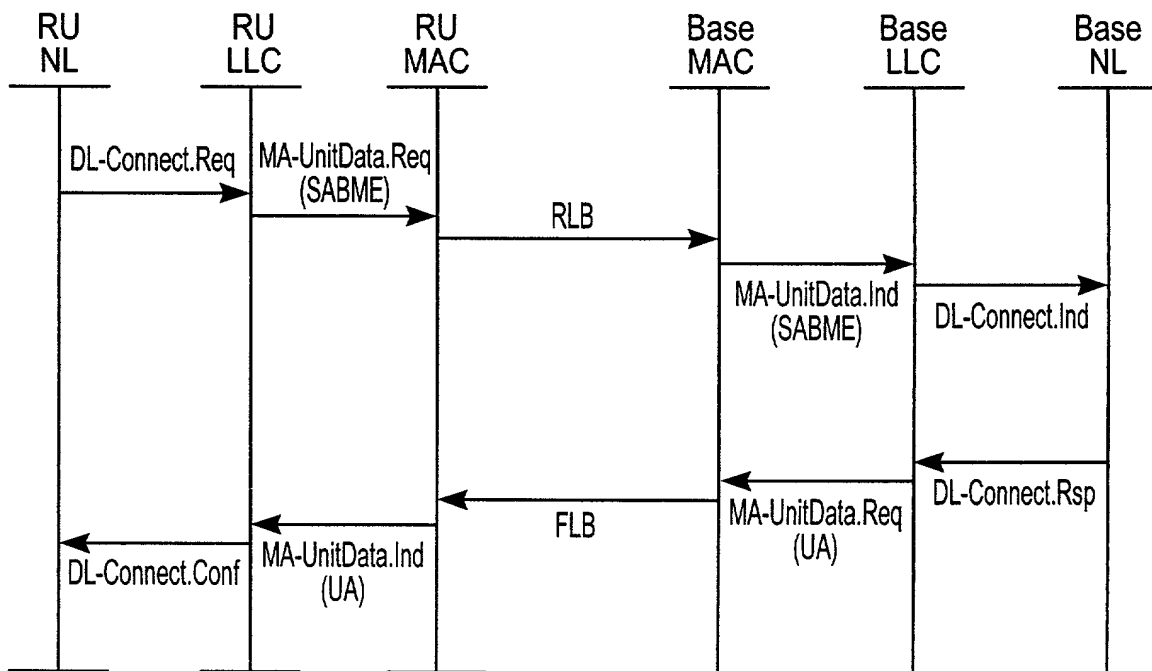


FIG. 81

10092937.082702





COPY OF PAPERS
ORIGINALLY FILED

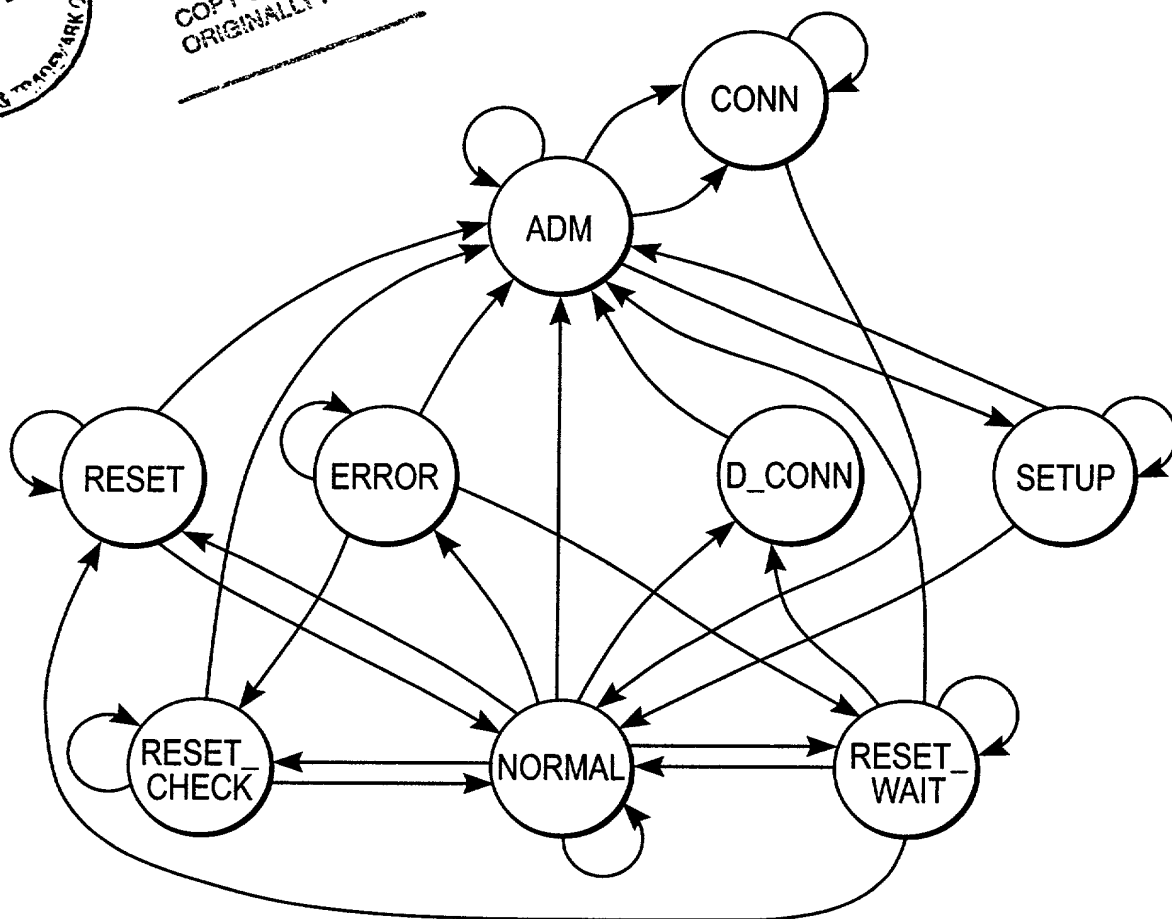


FIG. 82 (PRIOR ART)

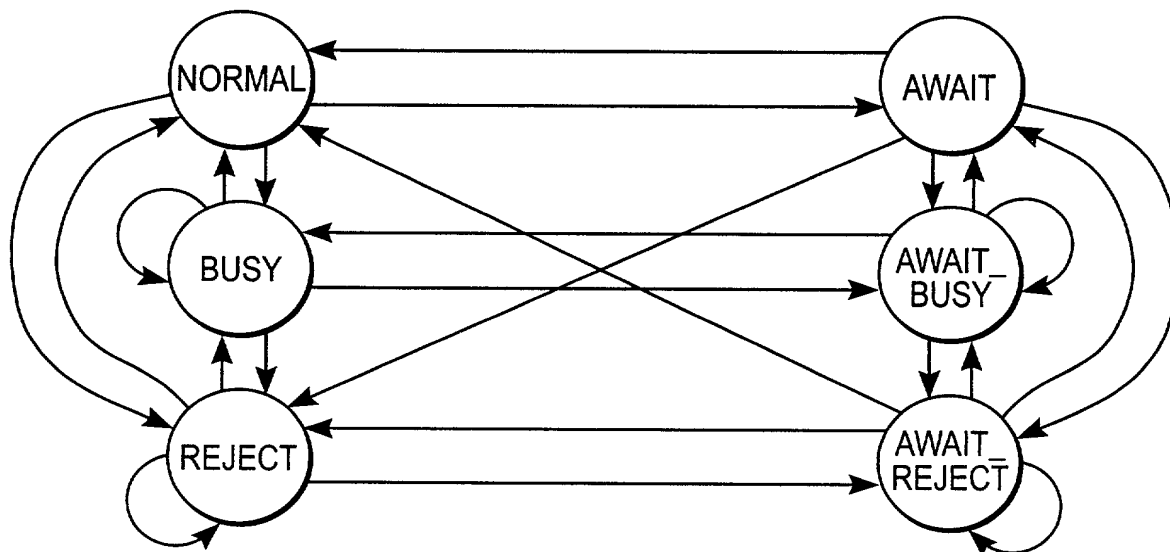


FIG. 83 (PRIOR ART)



COPY OF PAPERS
ORIGINALLY FILED

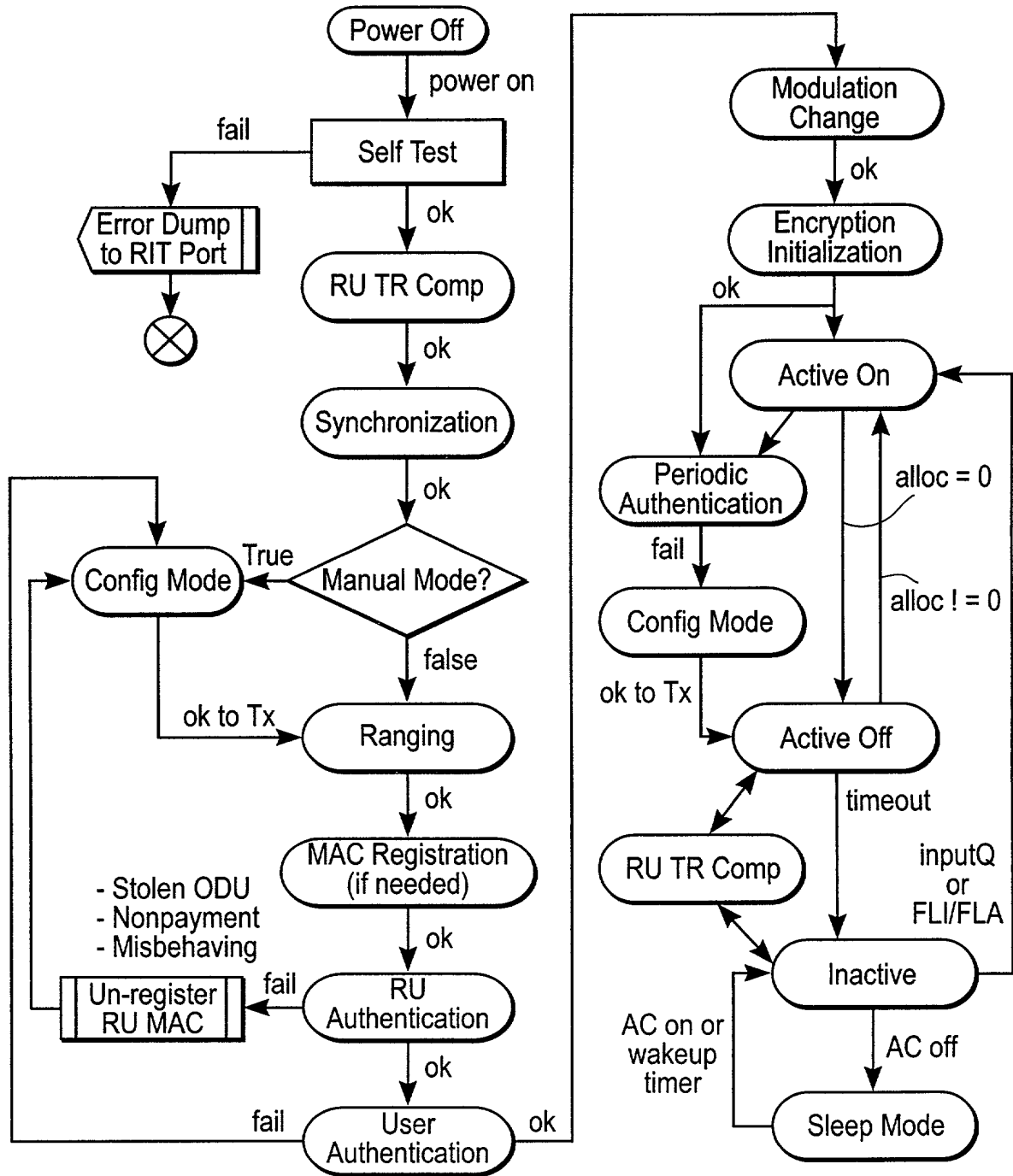


FIG. 84



204280" 4E62600T



COPY OF PAPERS
ORIGINALLY FILED

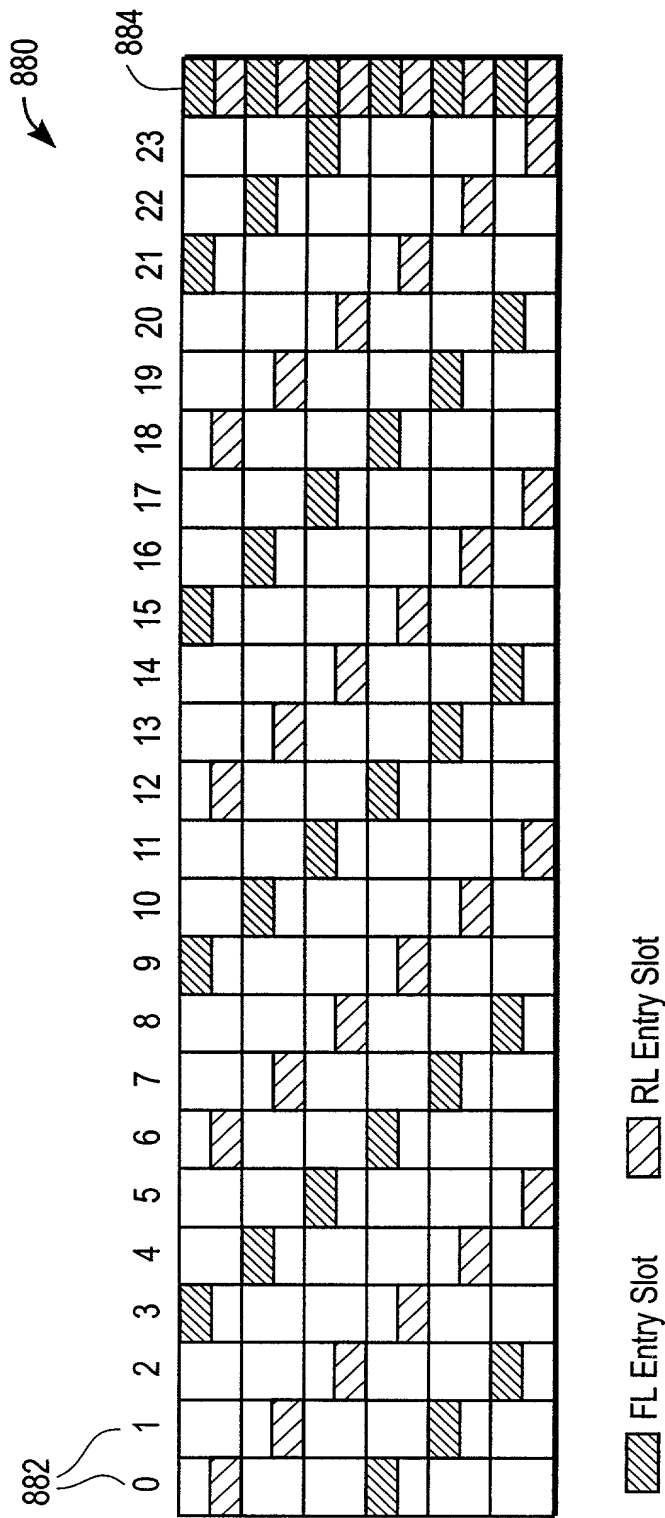


FIG. 85





COPY OF PAPERS
ORIGINALLY FILED

890

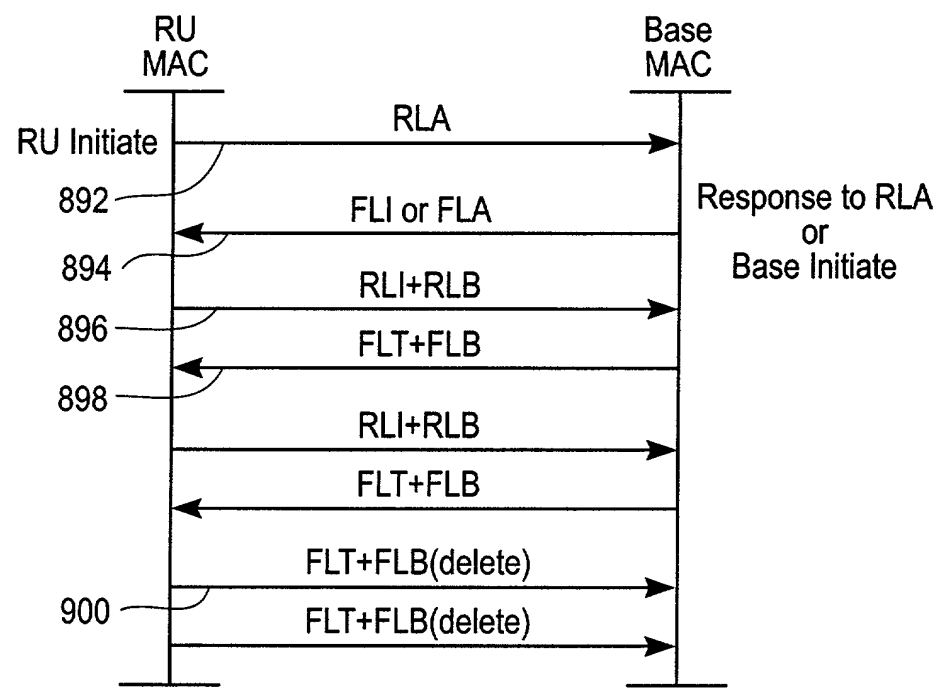


FIG. 86

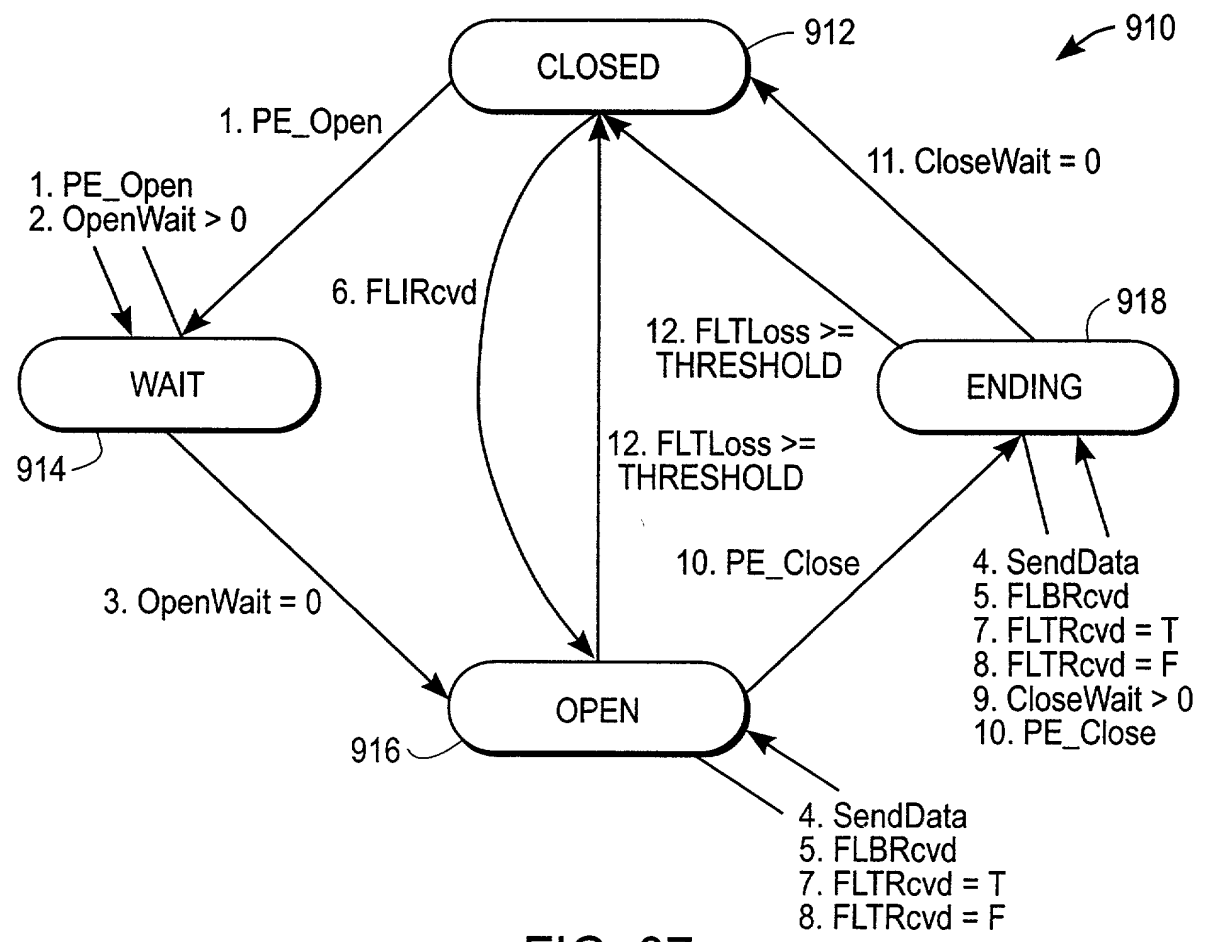
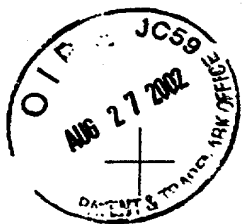


FIG. 87

202280-46626001





COPY OF PAPERS
ORIGINALLY FILED

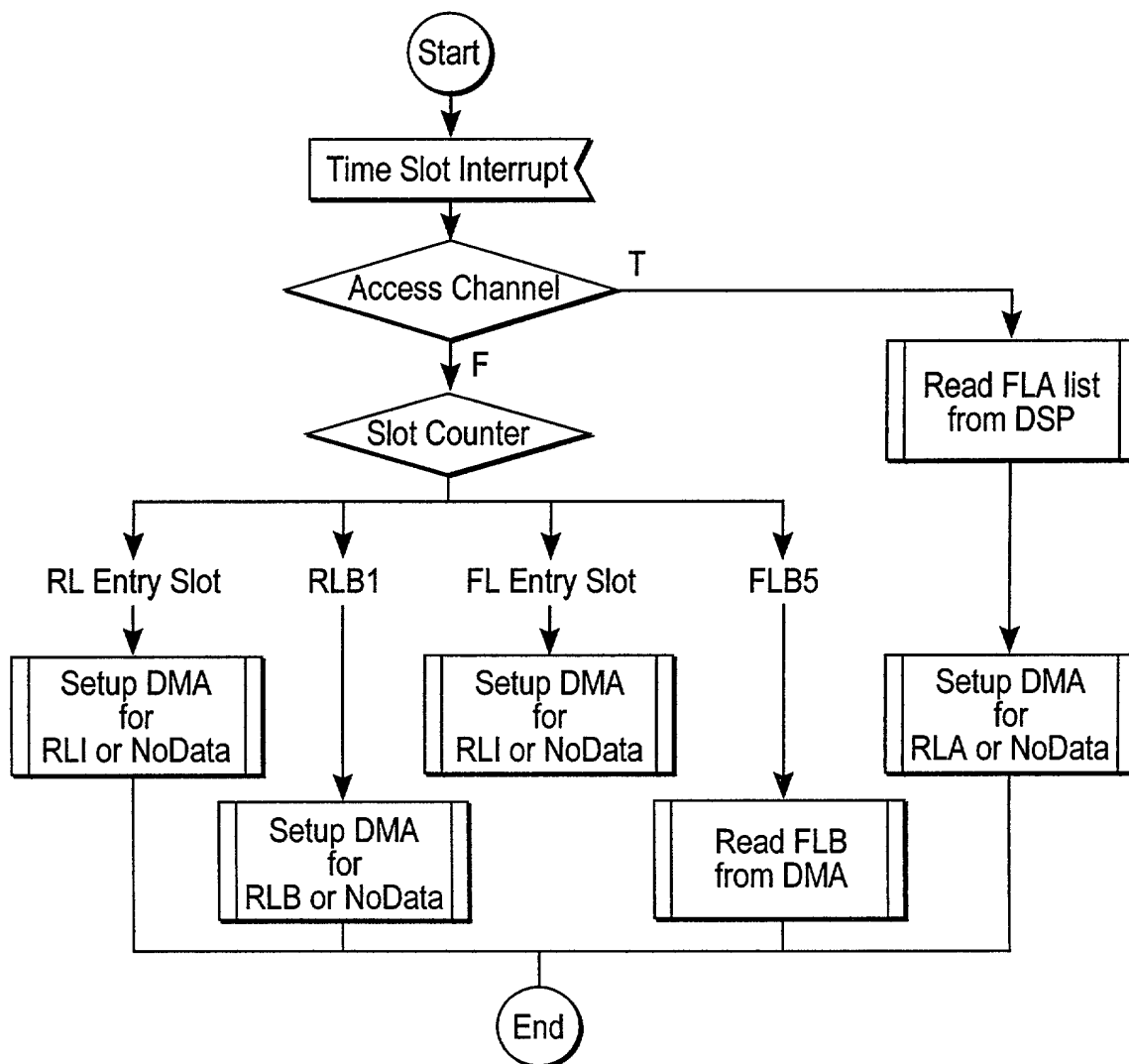


FIG. 88

20220927 10092937 082702





COPY OF PAPERS
ORIGINALLY FILED

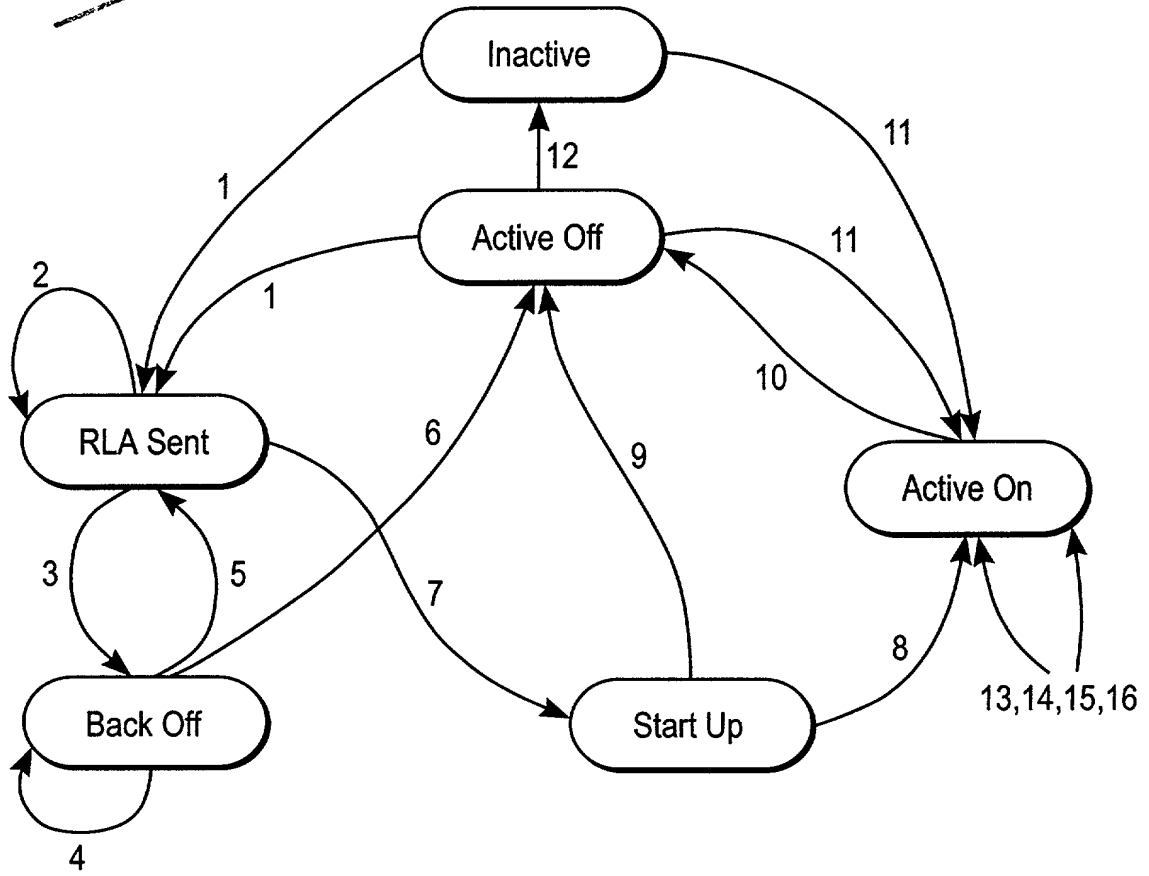
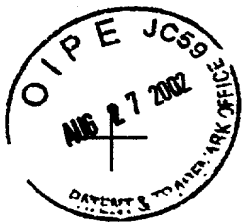


FIG. 89





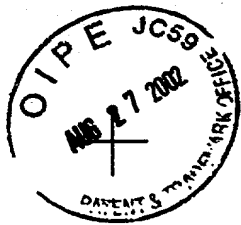
COPY OF PAPERS
ORIGINALLY FILED

1. Event = MA_UnitData.Request
SendRLA; Set ReplyCounter; RLAMiss=0;
2. Event = ReplyTimer > 0
ReplyCounter--;
3. Event = ReplyCounter = 0
RLAMiss++; BORetry--;
BOCounter=Ran(MIN+2*RLAMiss*Win);
4. Event = BOCounter>0
BOCounter--;
5. Event = BOCounter=0 & BORetry>0
RLAMiss=0; SendRLA; Set ReplyCounter
6. Event = BOCounter=0 & BORetry>0
Issue access failure signal; Reset BORetry;
7. Event = FLIRcvd or FLARcvd
Start PE to add partition; wait for partition open
8. Event = PE Success
9. Event = PE Fail
Issue access failure signal (?)
10. Event = Delete last partition
Start PE to delete partition;
11. Event = FLIRcvd or FLARcvd
Start PE to add partition
12. Event = ActiveOffTimeout
Reinitialize encryption/scrambling engines (call PE)
13. Event = MA_UnitData.Request
PE_SendData
14. Event = FLBRcvd
PE_UnitData.Indication

FIG. 90

204280" 4262600T





COPY OF PAPERS
ORIGINALLY FILED

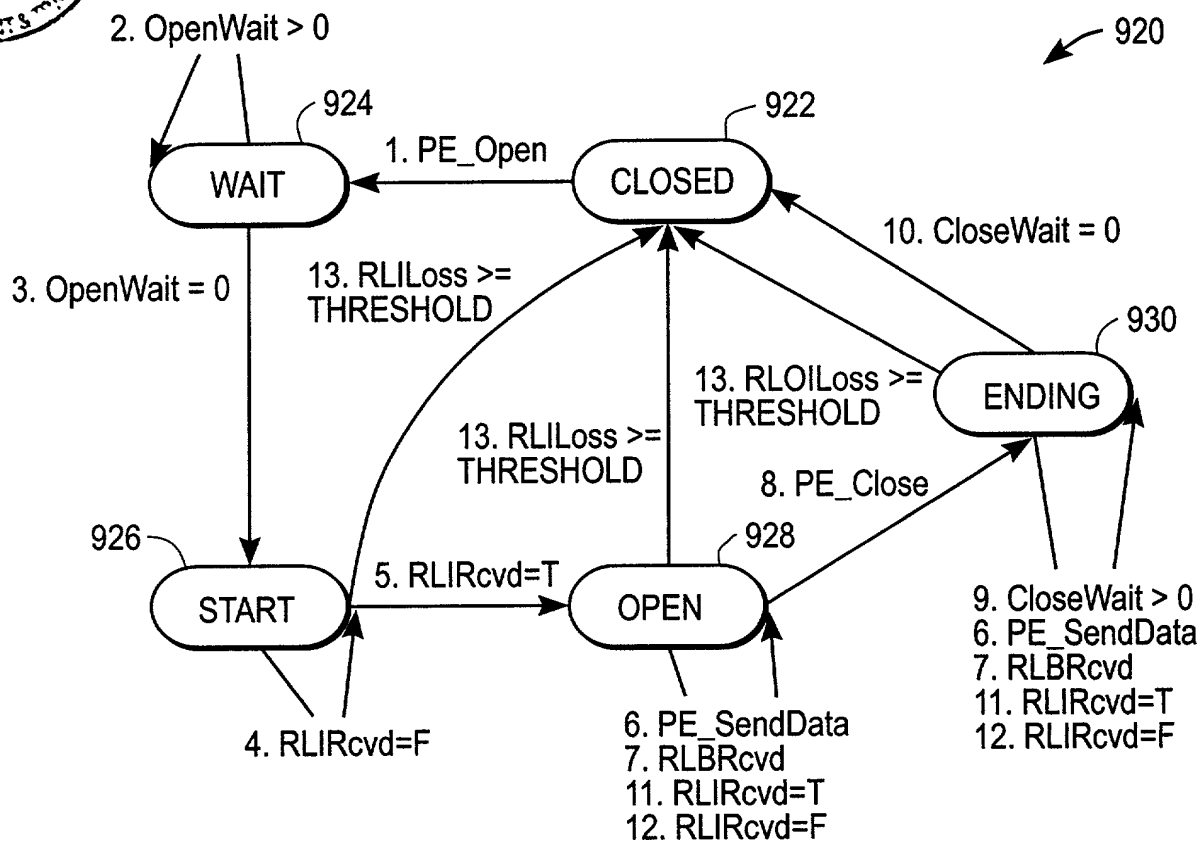


FIG. 91

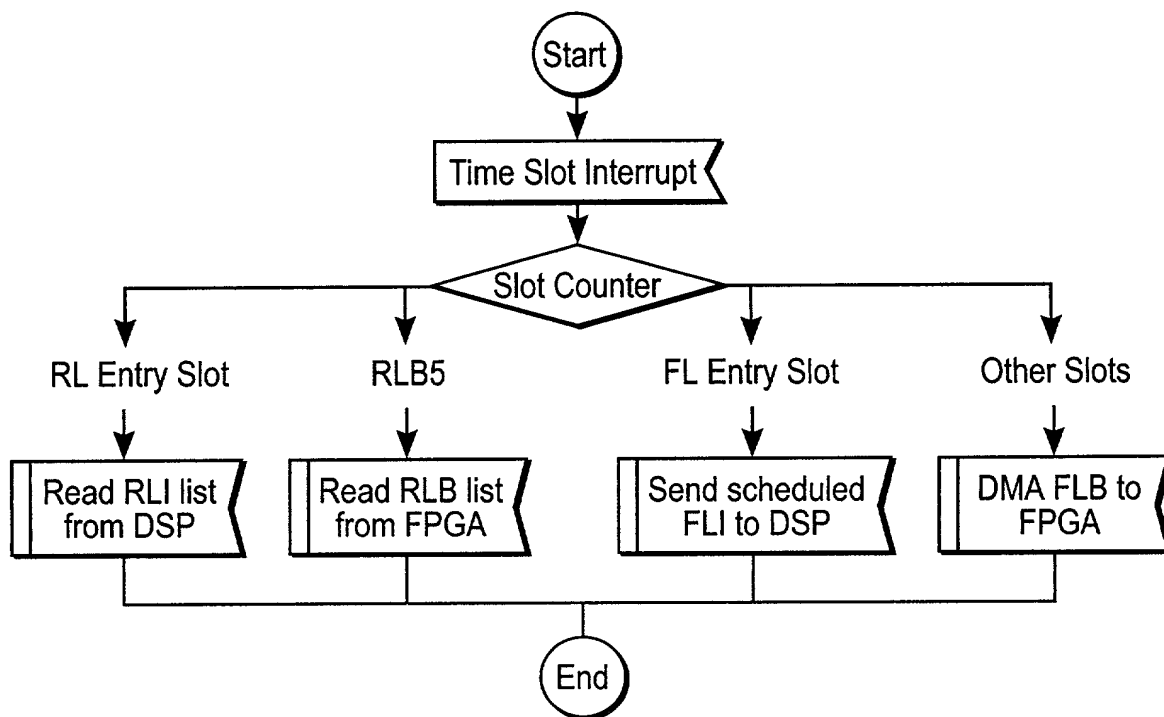


FIG. 92

20/280" 4662600T





COPY OF PAPERS
ORIGINALLY FILED

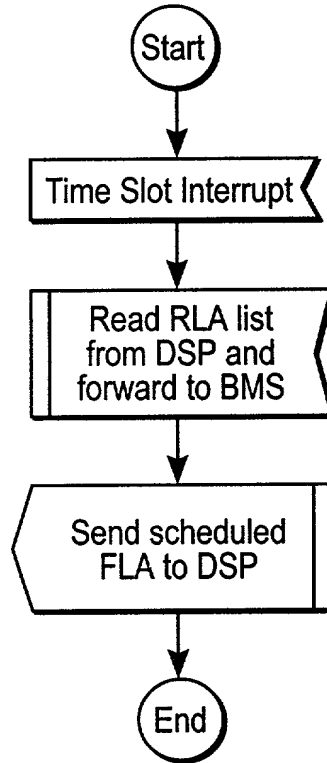


FIG. 93

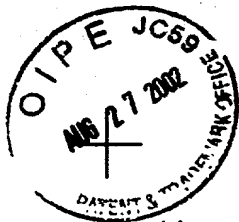
RUID	RU1	RU5	...	RU500
Backlog	1	12	...	1
Partition 0	1	1		0
Partition 1	0	1		0
...
Partition 23	1	0		0
CHANGE	-2	0		+1

FIG. 94

204280" 4E62600T

+

204280746626007



COPY OF PAPERS
ORIGINALLY FILED

Condition	message	Base starting state	Base action	Prob	Base next state	channel	RU start state	RU action	Prob	RU next state
normal	FLI	closed	send FLI		starting	pass FLI	closed	detect FLI	1-Pm(FLI)	starting
	RLI	starting	detect RLI		starting	pass RLI	starting	send RLI		starting
	FLT	starting	send FLT		starting	pass FLT	starting	detect FLT	1-Pm(FLT)	starting
	RLI	starting	detect RLI		open	pass RLI	starting	send RLI		starting
	FLT	open	send FLT		open	pass FLT	starting	detect FLT	1-Pm(FLT)	open
encr = 2 or more 0.99997										
encr = 2 or more 0.99458										

Pm_FLI
Pf_FLI
Pm_FLT
Pf_FLT
Pm_RLI
Pf_RLI

FIG. 95

Condition	message	Base starting state	Base action	Prob	Base next state	channel	RU start state	RU action	Prob	RU next state
RU false detects FLI and misses both FLTs	FLI	closed	skip FLI		closed	empty	closed	detect FLI	Pf(FLI)	starting
	RLI	closed	miss RLI	1	closed	pass RLI	starting	send RLI		starting
	FLT	closed	skip FLT		closed	empty	starting	skips FLT	1-Pf(FLT)	starting
	RLI	closed	miss RLI	1	closed	pass RLI	starting	send RLI		starting
	FLT	open	skip FLT		closed	empty	starting	skips FLT	1-Pf(FLT)	closed
encr = 0 1.00000										
encr = 2 9.98E-07										

FIG. 96

+



COPY OF PAPERS
ORIGINALLY FILED

Condition	message	Base starting state	Base action	Prob	Base next state	channel	RU start state	RU action	Prob	RU next state
RU misses both FLTs	FLI	closed	send FLI		starting	pass FLI	closed	detect FLI	1-Pm(FLI)	starting
	RLI	starting	detect RLI		1-Pm(RLI)	pass RLI	starting	send RLI		starting
	FLT	starting	send FLT		starting	stop FLT	starting	miss FLT	Pm(FLT)	starting
	RLI	starting	detect RLI		1-Pm(RLI)	pass RLI	starting	send RLI		starting
	FLT	open	send FLT		open	stop FLT	starting	miss FLT	Pm(FLT)	closed
			encr = 2	0.99997				encr = 2	4.0E-06	
base misses both RLIs and RU false detects either FLT	FLI	closed	send FLI		starting	pass FLI	closed	detect FLI	1-Pm(FLI)	starting
	RLI	starting	miss RLI		starting	stop RLI	starting	send RLI		starting
	FLT	starting	skip FLT		starting	empty	starting	detect FLT	Pf(FLT)	starting
	RLI	starting	miss RLI		closed	stop RLI	starting	send RLI		starting
	FLT	open	skip FLT		closed	empty	starting	detect FLT	Pf(FLT)	open
			encr = 2	2.9E-05				encr = 2	1.6E-05	
RU misses FLI	FLI	closed	send FLI		starting	stop FLI	closed	miss FLI	Pm(FLI)	closed
	RLI	starting	miss RLI		starting	empty	closed	skip RLI		closed
	RLI	starting	miss RLI		closed	empty	closed	skip RLI		closed
			encr = 2	3.0E-06				encr = 0	3.0E-06	
base misses both RLIs	FLI	closed	send FLI		starting	stop FLI	closed	miss FLI	Pm(FLI)	closed
	RLI	starting	detect RLI		starting	empty	closed	skip RLI		closed
	RLI	starting	detect RLI		open	empty	closed	skip RLI		closed
			encr = 2	8.4E-09				encr = 0	3.0E-06	
RU misses FLI, and base false detects either RLI	FLI	closed	send FLI		starting	stop FLI	closed	miss FLI	Pm(FLI)	closed
	RLI	starting	detect RLI		starting	empty	closed	skip RLI		closed
	RLI	starting	detect RLI		open	empty	closed	skip RLI		closed
			encr = 2	8.4E-09				encr = 0	3.0E-06	
RU false detects FLI and false detects either FLT	FLI	closed	skip FLI		closed	empty	closed	detect FLI	Pf(FLI)	starting
	RLI	closed	miss RLI		closed	pass RLI	starting	send RLI		starting
	FLT	closed	skip FLT		closed	empty	starting	detect FLT	Pf(FLT)	starting
	RLI	closed	miss RLI		closed	pass RLI	starting	send RLI		starting
	FLT	closed	skip FLT		closed	empty	starting	detect FLT	Pf(FLT)	open
			encr = 0	1.00000				encr = 2	9.0E-12	

FIG. 96 (Continued)